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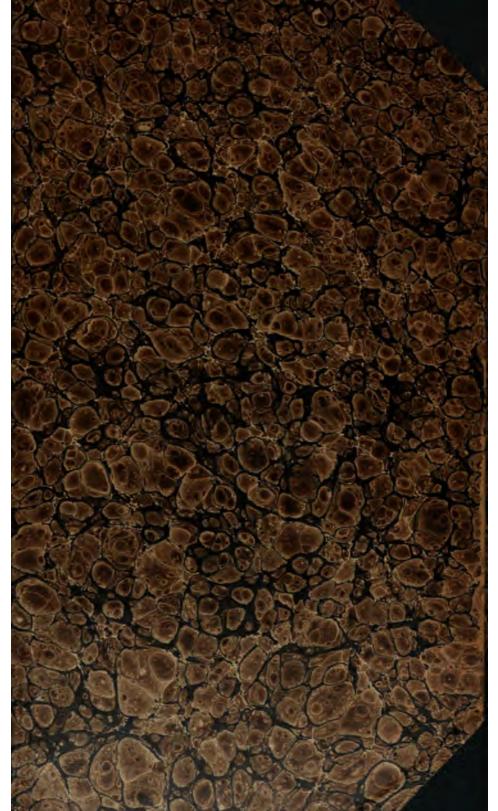
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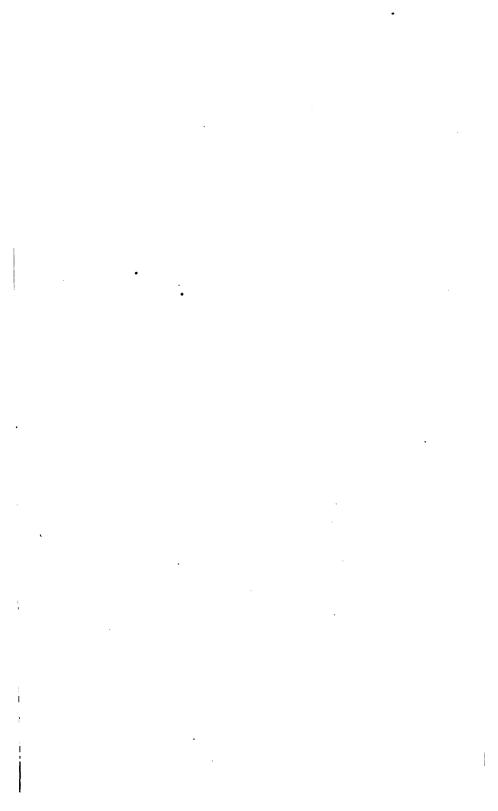
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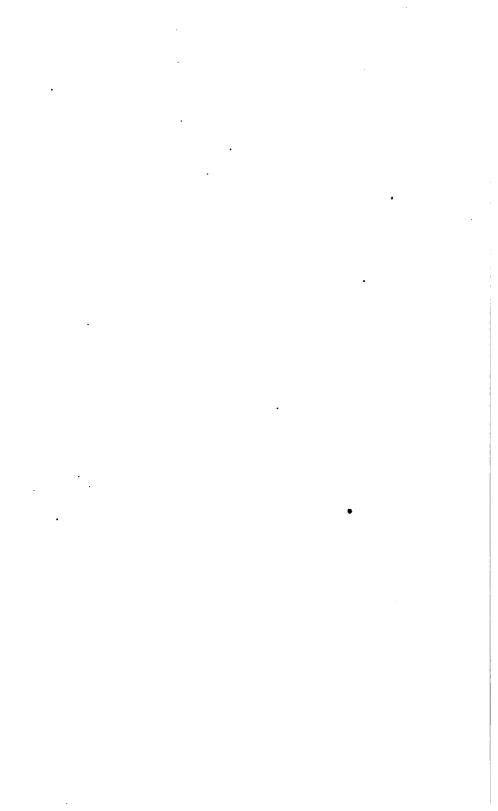
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DENTAL TIMES,

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No. 1.

CAOUTOHOUC.

ITS HISTORY, PROPERTIES; ITS COMBINATIONS FORMING HARD RUBBER,
AND THE MANNER OF WORKING IT FOR DENTAL PURPOSES.

BY E. WILDMAN, M. D., D. D. S. CONTINUED PROM PAGE 169, VOL. II.

Hard rubber is used by dentists as a base upon which to mount artificial teeth; to attach teeth and blocks to a gold base; to lengthen teeth on a gold base, or refit after absorption has taken place, and to restore the loss of the palate. It has been called into requisition to repair the loss of the nose, and for this purpose, owing to its plasticity, strength and durability, it fulfills most of the required indications better than any substance heretofore used. It may be also used for instrument handles and impression cups, &c.

In treating upon working rubber for dental purposes, I shall not give in detail the various modes practiced by different manipulators, as this would fill a volume, but confine myself principally to my own. For vulcanite work, in obtaining an impression of the mouth, the same course should be pursued as for metal work, taking care to have it accurate and smooth, free from imperfections; and I would here call attention to an important step in taking an impression of the mouth, which I find is overlooked by many, that is, immediately before inserting the cup into the mouth, with a napkin wipe the gums (and teeth if there be any) dry. I look upon as being an essential point in procuring an accurate impression, especially when wax or wax compounds are used. The saliva, when present on the gums, interposes a viscid film between the wax and the surface which we desire to obtain an impression, causing the wax to glide over the surface instead of adhering, thereby destroying the accuracy of the impression. For partial sets, I prefer the wax compound of paraffin and wax, and give it the preference to wax or any other of the compounds of wax that I have used, or even plaster; but without the precaution of having it just soft enough to be plastic, and the gums and teeth perfectly dry, it would not be reliable. In cases where there are no teeth, I invariably use plaster to take an impression. Where the gum and palatine arch are of uniform consistency, use plaster alone, but where some parts are yielding and others rigid, first take an impression in wax or wax compounds of a consistency to press up the yielding parts, as they would be affected in mastication, then remove, trim and score the wax impression, add a film of plaster, re-insert in the mouth, press firmly up and get a plaster impression, which will be reliable.

In making the model, care should be taken to have its face smooth, and the body hard and compact. To insure a smooth surface with a plaster impression, the plaster should be saturated with water; the better plan is to cast the model immediately after taking the impression; if this is not practicable, immerse in water to restore what is lost by evaporation. Then use such substance as the operator may prefer to prevent adhesion; the practice of drying the impression, varnishing and then oiling, is a useless waste of time; a thin film of oil may be used, but I prefer a solution of soap, neither of which must be used in excess, and a solution of soap can only be used upon naked plaster; if applied to varnished plaster or a wax surface, it will act upon the plaster cast into the mould, and cause its surface to be pulverent, so that the fine lines will be readily effaced. The same effect upon the surface of the model may be produced where the impression is dry, by its absorbing the water from the cast, so as to prevent the proper chemical union taking place. To obtain solidity, the plaster should be of good quality, mixed as thick as can be manipulated, and free from air bubbles.

When the impression has been taken with wax, where there are teeth, fill the cavities made by the teeth with water, then add a little plaster, mixed thick; jar the impression; the plaster will settle into the recess and the water will rise; then add sufficient plaster to make the model of the required thickness, jarring so as to cause the plaster to better consolidate.

In parting the model from the wax impression, I prefer immersing the whole in water at a temperature just sufficient to make the wax plastic enough to be removed from the teeth without endangering their fracture. The advantage of warm water over dry heat is, that it keeps the plaster saturated, and the wax or wax compound does not enter its pores, parts freely, and leaves the surface clean, which is very important for vulcanite work. When parted in this manner it is not necessary to oil the wax impression before easting into it.

For the base for the model set, various substances are used. Some prefer wax in sheets; these may be made by casting or rolling wax to the proper thickness, or a better plan by immersing sheets of paper in melted wax, withdrawing to cool, and repeating the process until the sheet has obtained the required thickness. The gutta percha of commerce has been used, but is objectionable for the reason, when in thin sheets it is wanting

in the proper rigidity, and often becomes so adhesive as to make it unpleasant and difficult to work. Others prefer a metal plate stamped up as for a metal base; when such is used, block-tin or pewter may be resorted to with advantage.

I prefer as a base, the prepared gutta percha; this is prepared by incorporating with gutta percha white oxide of zinc, and a fine white clay to give it firmness, also a little vermillion is added to give it a better color. Various compounds are vended, some are wanting in the necessary rigidity, others after a short time become so brittle as to be worthless. At present I have found that manufactured by Am. H. R. Co. the most reliable.

In making a model plate of this substance, the prepared gutta percha may be softened by dry heat, or preferable in water at a temperature above 150° F. The model should be saturated with cold water, this prevents the gutta percha from adhering and injuring the face of the model; the softened gutta percha is then pressed down firmly with the fingers, wet with cold water.

In arranging blocks or gum teeth, the approximal faces should be fitted accurately, and, when practicable, with a very thin wheel, cut grooves in the base and approximal faces; the rubber flowing into these grooves materially assists the pins in retaining the teeth in their position, and in many cases I rely as much upon the grooves as upon the pins.

Where teeth are used with plain pins, the pins should be curved or hooked horizontally; if the curve is made perpendicularly, and in an arc of a circle, of which the base of the tooth is the centre, the pins will easily pull out by a force applied to the point of the tooth. Double-headed pins are the most reliable, and when properly made, there is no possibility of the tooth becoming detached from the rubber without a fracture of the pin or tooth.

In some peculiar cases where I could not procure rubber teeth to answer the purpose, I have used the ordinary plate teeth. They may be prepared so as to make them as firm and secure as rubber teeth, by running a film of gold solder upon a narrow strip of gold or platina plate; then square the ends of the pins, bind or clamp the strip with the solder face in contact with the ends of the pins, heat up to the fusing point of the solder, this will unite the strip to the pins and form a staple, giving a firm hold for the rubber, and where there is a narrow neck of rubber running out to a single tooth, this strip may be extended down into the rubber to give it additional strength; in such case the metal should be serrated at the edges, or have small holes drilled in it.

In upper sets, where there are only a few of the under front teeth, and they are irregular as to position or height, we may form an articulation with the rubber, just back of the point of the artificial teeth. This is done when the teeth are arranged upon the model plate, by placing soft wax on the back of the teeth, and allowing the patient to bring the jaws together sufficient to form the desired articulation. We thereby secure an impression of the antagonizing surface of the under teeth, which must be carefully preserved in the model, and also in finishing the rubber set; this will, in many cases, prove of great advantage, giving a bearing for all of the natural teeth, which could not be obtained without making the artificial irregular and unsightly.

Again, there are many cases where some one or more of the inferior molars, when the front teeth are properly articulated, project up so far as not to admit of the use of a porcelain tooth having sufficient substance to bear the force in mastication; in such cases rubber may be substituted with good effect. The proper length and form of antagonizing face may be obtained with wax, on the same principle as mentioned in the preceding case. In finishing the model, it should be smooth and rather thicker than we desire the plate when finished; just sufficient additional thickness given to allow for trimming and polishing; a large excess is a loss of material and time.

The next step, after the model has been made and the articulation proved to be correct, is to place it in a flask. The keys or guiding pins of a flask should be long, and fit accurately, so as not to allow any lateral motion when the sections are closed.

Before casting into an iron flask, it should receive a coating of some substance to prevent the plaster from adhering to it; for this purpose, I generally use a solution of soap, allowing the film to dry; this causes the plaster to part more readily from the iron. I have a rule in the treatment of my flasks which I think a good one, that is, when a flask is opened, I immediately remove all the plaster, wash it clean, and then dry; by this means flasks that have been in use for years are as clean and free from oxide as when new. When first opened, it cleans much more easily than when the plaster has been allowed to become dry and cemented to the iron by oxide; besides economy in time, we have a sightly instrument the next time its use is called for.

In filling a flask, first saturate the model with water to prevent it from robbing the new plaster of its moisture; mix the plaster thick as it will pour, to give it strength, partially fill the lower section, then introduce the model not horizontally, but inclined at one edge, so as it is forced down into its bed the air shall be excluded from beneath it. The proper height to fill the lower section, or to have the line of division, is, for teeth whose bases rest upon the base plate just below the porcelain so as to allow the teeth to be imbedded in the upper section; for teeth whose bases rest

upon the natural gum, the division should be at the point, fastening them in the lower section. After the plaster has set, trim the surface smooth, to prevent adhesion of the upper section, some varnish and oil, others simply oil; either will answer the purpose, but I prefer a thin coating of a solution of soap; this done, the upper section is then carefully filled.

To separate the flask, dry or moist heat may be used. Dry heat is more uncertain than moist, for the reason the heat expels the moisture from the plaster, and if carried too high, the wax melts and runs into the plaster, or if gutta percha is used, it becomes adherent, and is very difficult to remove. When this difficulty occurs with wax, it may be partially overcome by melting it out over the fire, or better immersing the flask in boiling water with the face of the mould upwards; but in either case, the face of the plaster is liable to be contaminated with wax.

I prefer the use of moist heat, and proceed in this manner: in a basin of water, beside my flask I place a thermometer, gradually raise the heat to 125° F., not higher, allow the flask to remain in the water at this temperature a few minutes, so this degree of heat may penetrate through its substance; then remove and separate; when these conditions are followed, the model plate parts readily from the plaster and teeth. Should it accidentally get too warm, and there is wax present, immerse in cold water to chill the wax; it will then freely part from the surface of the plaster as it is saturated with water. The mould should be thoroughly cleaned, and every particle of foreign substance removed from the pins. I find a small pointed instrument, flat, and curved at the point nearly at a right angle with the shaft, very useful in cleaning under the pins. It is advisable to rub the pins with a small pledget of cotton dipped in absolute alcohol, especially where there are any particles of foreign substance adhering to them.

The importance of removing every particle of wax from the mould is demonstrated by some experiments I made to ascertain the effect of lard oil, yellow wax, white wax and paraffin upon rubber during vulcanization. In the bulbs of separate tubes were placed these substances in contact with unvulcanized red rubber; they were corked, and then put in a bath of paraffin, in which was suspended a thermometer; paraffin, when melted, is transparent, so the effect at the different stages could be readily noted. The heat was gradually raised, and the result was as follows:

Paraffin and Rubber.—At 220°, no apparent action;

At 280°, deep red;

At 300°, similar to 280°, little apparent change.

After being at 320° one and a quarter hours, and at 320°, appeared nearly all solid in the tube; a slight portion of a yellow oily-looking fluid ran down when the tube was inverted.

When cold, the paraffin and rubber in a great measure separated; but the integrity of the rubber was lost where it had been in contact with the paraffin.

Lard Oil and Rubber.—At 220°, rubber commenced to dissolve;

At 280°, oil red, dissolved more than the paraffin;

At 300°, action slightly increased;

At \$10°, rubber run down, but not all dissolved.

After being at 320° one and a quarter hours, rubber nearly all dissolved. When cold, oil red, fluid, no solid rubber in the tube.

Yellow Wax and Rubber.—At 220°, no action;

At 280°, action very slight; At 300°, action slightly increased.

After being at 320° one and a quarter hours, and at 320°, fluid deeply colored.

When cold, the dissolved remained in combination; integrity of the rubber destroyed.

White Wax and Rubber.—At 220°, no action;

At 280°, wax slightly tinged with red;

At 300°, quite red.

After being at 320° one and a quarter hours, and at 320°, wax fluid and deeply colored.

When cold, wax and rubber remained in combination.

White wax appeared to act more upon the rubber in the early stage than the yellow, and its solution was more homogeneous at the termination of the experiment. Whatever arguments that may be urged in favor of slovenliness in manipulation, are fully answered by the above results.

Grooves or gates should be cut in the plaster, radiating from the mould to the outer edge of the flask, to allow the excess of rubber to flow out when the sections of the flask are being brought together. Some cut a groove encircling the mould about midway between it and the edge of the flask, then making numerous small grooves radiating from the mould to the encircling groove, and from this a few larger ones to the circumference of the flask. This having been done, the mould is carefully brushed, to remove all loose particles of plaster. The model should then be coated with some substance, to prevent the rubber from penetrating and adhering to its surface. Various substances, with varied success, have been used for this purpose. Finely pulverized soap-stone rubbed into the face of the model with the finger, has been used with a moderate degree of success.

Tin Foil is extensively used; by giving the surface of the model a

coating of varnish, then, while it is adhesive, press down upon it a sheet of tin foil, it fulfills the required indications. When the tin foil adheres to the rubber, it may be removed after the case is taken from the flask, by the application of either nitrie or hydrochloric acids.

Soluble Glass, or Liquid Silex, prevents the adhesion of the rubber, but it must be used with care. Give the face of the model a thin, uniform coating, and allow it to dry before the packing is commenced. This precaution is necessary to insure success; for if the liquid silex is in excess and fluid, it will insinuate itself between the pieces of rubber in packing, and prevent their adhesion. I have just commenced to use this substance, and so far have met with perfect success.

A preparation called *Ethereal Solution*, offered in the market, is very highly extolled by those who have used it, and I have no doubt it performs all that is claimed for it.

Collodion answers the purpose well, and I have used it successfully for several years; the only objection to it is, the film will sometimes adhere to the rubber when vulcanized, and so darken it as to give it an unsightly appearance.

To those who desire to prepare the cotton and make the solution, the following formula I have found, after numerous trials, the most reliable. To prepare the cotton, take

Pure nitrate of potash, finely pulverized and dry, 600 grs.,
Add water, - - - 1½ f. drs.,
Sulphuric acid, (commercial,) - - 12 f. drs.

Stir well together with a glass rod; when at the temperature of 130° F., immerse the cotton, and allow it to remain from seven to ten minutes; then press out the acid, and wash quickly in a large quantity of water, repeat the washing until all the acid is removed; then press the pyroxyline or changed cotton, in the folds of a napkin, to absorb the water, separate the cotton into a loose mass, and dry at a moderate heat.

Cotton thus prepared is somewhat explosive, although not so much so as true gun-cotton, leaves a residue, and is more soluble.

To make the solution, take

Rectified sulphuric ether, - - 12 drs.,
Absolute alcohol, - - - 4 drs.,
Prepared cotton, (pyroxyline,) - 5 grs.

The addition of alcohol to the ether alters the properties of the film from what it would be if the ether was used alone; it possesses little consistency, adheres firmly, and has less tendency to contract. Where a collodion of greater consistency is required, add more pyroxyline to the solvent, and, where the taste of the operator requires it, add a little alkanet root to the ether before the pyroxyline is introduced, and any shade

may be obtained, according to the quantity of alkanet used, from a faint blush to a deep red.

To fill the joints between the blocks or gum teeth, different substances have their advocates, viz:—calcined plaster, finely pulverized silex or felspar moistened with liquid silex, calcined plaster colored with vermillion, liquid silex, and os-artificial, all of these in the course of time will yield to the action of the fluids of the month, and then the ill-fitting joints will be a receptacle for soft particles of food, which will be more objectionable than having them filled with good solid rubber. The best filling is an accurately fitted joint, when so made; when the enveloping plaster is of good quality and properly mixed, and no undue force is used in bringing the sections of the flask together, there is little danger of the rubber insinuating itself into the joints.

The next step is to pack the rubber in the flasks. Sometimes in opening the flask or cleaning out the model base, a block or oftener a tooth becomes loosened from its bed; when such accidents occur, the best mode of remedying it that I have found, is to place a drop of very thick shellac varnish upon the plaster, then force the block or tooth into its position; in a short time the plaster will absorb the alcohol from the shellac, and it will be firmly held in its bed.

The flasks or moulds may be packed cold, but it is a better plan to warm them; the heat should be raised gradually up to the point rubber is softened. One important consideration should ever be borne in mind to insure success in the manipulation of rubber, that is, the moulds, instruments used, and rubber, must be perfectly clean and free from all foreign substances; cut the rubber in small strips and squares, and heat it to make it more plastic. The heating may be done over the naked flame of a lamp, or upon a metal plate; by either of these modes the rubber is liable to become overheated and its texture impaired. The better plan is to use a metal water-box, a suitable size is one having a surface six by eight inches, two deep, with a tube in one of the corners, one inch in diameter and two in height; this answers the double purpose of an opening to fill the box and to allow the escape of steam. In using this instrument, there is no danger of overheating the rubber. With the strips, pack around the pins and into the grooves, then proceed with the squares, using care to consolidate the pieces as added, and not to enclose any air bubbles. Avoid packing full to the porcelain gums, especially when they are thin and come near the model, as in such case the force in bringing the flask together would be, in a great measure, expended latterly against the porcelain shell and endanger its fracture. By making the centre the fullest, the force is expended upon the strongest part of the mould, and as it yields, the rubber flows in around the more delicate parts.

Several rules have been given to ascertain the exact quantity of rubber required to fill the mould. The specific gravity of pure wax is 0.96. I have found that of the American Hard Rubber Co.'s prepared gutta percha to be 2.454, and the American Hard Rubber Co.'s red rubber 1.572; hence to fill the mould, when pure wax is used for a model plate, it will require to one part of wax, by weight, 1.6 of the Co.'s red rubber, and when the plate is made of prepared gutta percha, it will require to one part of it, by weight, .6 of the red rubber. When the wax is colored, the disparity in weight will not be so great as with pure wax.

In filling the mould, an excess of rubber should be used to insure compactness. It is a much better plan to lose a little rubber than a set of teeth, which is liable to occur where too close a calculation is made to save a few scraps of rubber.

Bringing Sections of the Flask together.—Although rubber is plastic, yet such is its nature that it will not yield to the sudden application of force, as well as to continued firm pressure; therefore the best plan is to apply the force through the medium of a spring clamp, which acts uniformly and continuously, which is less liable to fracture the porcelain gum than when it is abruptly applied.

Several different spring clamps have been devised, which operate well. A modification of my own construction I prefer: it has a strong steel spring of a

shape, to its lower limb is secured a cast-iron plate, sufficiently large for the bottom of the flask to stand upon; to its upper limb is also secured a plate, through which three thumb-screws pass and press upon the top of the flask at equi-distant points. The advantage of having three screws arranged in this manner is, that it enables us to bring the sections of the flask together parallel.

In closing the flasks, they should be heated to make the rubber more yielding and adhesive. Dry or moist heat may be used. In using dry heat, there is danger of overheating the rubber, and thereby injuring its texture. I give a decided preference to moist heat, or retaining the flask in boiling water, (frequently gently tightening the screws,) until it is closed. It has the advantage over the dry process in the saving of time, and of not endangering the integrity of the rubber.

Care should be exercised to bring the sections close together. If this precaution is neglected in partial sets, where the base of the teeth do not rest upon the gums, they will be displaced from their relative position towards the natural teeth. If the teeth rest upon the gums, and the division line is at the points, there will be a sheet of rubber overlapping them, which will be troublesome to remove, and in a whole set there will be an extra thickness under the teeth, making them too long. When the

flask is closed, it should remain under pressure until the work is vulcanized and cool.

Vulcanization.—To vulcanize rubber, requires a high degree of heat, and this to be maintained for a time proportioned to the temperature; as a medium, hot air, hot water, or steam may be used. Fusible metal, wax, paraffin and other substances, capable of sustaining the required degree of heat without change, have been resorted to. Either water or steam is used by dentists in a steam-tight vessel, called a vulcanizer. Vulcanizers with a single chamber, which are but a modification of Papin's digestor, are now universally used. When the operator desires to vulcanize in steam, using a vulcanizer with a single chamber, it can be readily done by placing a diaphragm above the water, and let the flask repose upon it. Every vulcanizer should have a safety valve, or its equivalent; also, a correct thermometer or a steam gauge, to enable the operator at all times to know the extent of pressure within.

A vulcanizer should be strong enough to resist far greater pressure than is usually employed, for the reason that it is continually growing weaker every time it is used, from the strain upon the fibres of the metal, and erosion of its substance; this latter cause of loss of strength has been disputed, but I have repeatedly detected copper in the dark deposit which forms upon the inside of the vulcanizer; this proves a loss of metal, consequently strength; and also, to avoid the danger of an explosion in case by inadvertence, the pressure should become unduly great.

Wrought is preferable to brittle cast metal for a vulcanizer, as it has greater tensile strength, and in case of an explosion, it generally opens in a rent, while cast metal separates in fragments, which would be rather unpleasant companions when propelled by a force of ninety and upwards pounds to the square inch.

Very many accidents have occurred by the use of badly constructed vulcanizers, and from the want of the knowledge of the strength of metal and the force of steam by dentists; and we may reasonably look for their increase in the use of the vulcanizers in market after they require age, if more discretion is not used by dentists.

The importance of this knowledge, I have endeavored to impress upon the minds of the students of the Pennsylvania College of Dental Surgery for years past, and I am gratified to see the interest taken upon this subject, as is evinced by the attention paid to the valuable articles in the Dental Times, written by Dr. A Lawrence.

Numerous experiments have been made by scientific men to ascertain the elastic force of steam at different temperatures. The results of their investigations are not uniform, although all show the immense force of this agent at high temperatures. Haswell's tables are looked upon as good authority: the results of the investigation of the Franklin Institute committee in the higher degrees give a greater elastic force. I shall, however, quote the results of the experiments of the commission of the French Academy, appointed by the French Government to investigate this subject, for the reason that, from the manner in which they were conducted, they are probably as reliable as any, and that they are extended to a more elevated temperature than the others.

Elasticity of steam, taking atmos- pheric pressure as a unity,	Temperature, F.	Pressure per square inch,
	212°	
	233.96°	
2	250.52°	29.4
24	263.84°	36.75
8	275.18°	
81	285.08°	51.45
4	293.72°	58.8
41	300.28°	66.15
5	307.05°	
54	314.24°	80.85
6	320.36°	88.2
64	326.26°	
7	331.70°	
74	336.86°	110.85
8	341.78°	
9	350.78°	
10	358.88°	
11	366.85°	161.7
12	374.00°	176.4
13	380.66°	191.1
14	386.94°	205.8
15	392.86°	
16	398.48°	235.2
	403.82°	
18	408.92°	
19	413.78°	279.3
20	418.46°	294

I now wish to call the attention of those using high steam to an important consideration. In raising steam, the ratio of the increase of pressure or elastic force is far greater than that of the increase of temperature. By referring to the above table, commencing at 212°, and taking steps as near fifty degrees as is given in the ascending scale, we find this exemplified. Thus

Increase of

Increase of force

Giving a force

			temperature.	per squa	re inch.	per squar	e inch.
From	212°	to	263.84°=51.84°	.22.05	lbs	36.75	lbs.
"	363.84°	to	314.24°=50.40°	.44.10	lbs	80.85	lbs.
"	314.24°	to	366.85°=52.61°	.80.85	lbs	.161.85	lbs.
"	366.85°	to	418.46°=51.61°	132.15	lbs	.294 lbs	١.

This comparison shows clearly how rapidly the pressure increases at high temperatures, and warns the operator that a strong instrument, combined with care and judgment in its treatment, are indispensable to safety. Besides the rapid increase of pressure, it must be borne in mind that at high temperatures copper becomes weakened, and in a measure loses its power to resist this great imprisoned force. Copper, in passing from 212° to 320°, F., loses about one-tenth of its strength, and at 550°, it has lost one-fourth of its tenacity.

[TO BE CONTINUED.]

DISEASES OF THE MAXILLARY SINUS.

BY GEO. T. BARKER, D. D. S.

[Continued from p. 147.]

The nature, causes and treatment of dropsy of the antrum having been considered in previous communications, I now propose to direct attention to another abnormal condition, which is known as inflammation of the lining membrane of the maxillary sinus. Dropsy of the antrum is always attended with active or passive congestion, and thus it is that it may continue until eventually true inflammation has been induced. The lining membrane of the maxillary sinus may become inflamed from a variety of causes, among these may be instanced as the most frequent, external injuries, blows on the side of the face, suppression of normal secretionsas the cutaneous perspiration which may be surpressed by cold acting for a length of time upon the face—the accumulation of degenerated mucus in the sinus, which by its presence irritates the lining membrane, exciting inflammation, as previously stated, a depraved condition of the blood, arising from a syphilitic taint, or a scrofulous diathesis, and above all the irritation developed by loose, carious or necrosed teeth or roots, or any of those disordered conditions of the periosteum, which terminate in either periotitis or alveolar abscess; the inflammation in such cases being induced by contiguity of structure—it may also be propagated in this way from the mucous membrane of the nose. As has been stated, persons of scrofulous or syphilitic habit are more prone to affections of this nature in consequence of the depraved conditions of the blood. In both of these disorders, nutrition is imperfectly performed, the perfect balance which is necessary to exist between "waste and supply" to induce health is not

kept up, the balance being in favor of the former; hence it is that inflammations of lining membranes of cavities, as the nose, frontal, or maxillary sinuses are not uncommon. But of all the different influences which induce the abnormal condition under consideration, all writers agree that diseased teeth and roots are the most frequent exciting cause; therefore it must be evident that dentists should be familiar with these disorders, and be prepared to treat them intelligently and creditably to themselves and their profession.

The symptoms of inflammation of the sinus and mucous engorgement differ somewhat from each other; in the last named condition there is usually an entire absence of pain until the chamber of Highmore has become filled; the pressure of the enclosed fluid upon the nerves of the lining membrane being the cause of the pain. In inflammation, however, there is usually more or less pain from the beginning, dull and continuous, gradually becoming more and more severe, a sense of weight and heat; the pain in some cases seeming to fix itself in the roots of the molar teeth. It has been contended by some writers that where the inflammation of the sinus has been induced by diseased teeth, that tooth-ache of a severe character is generally induced. This might be the case in certain conditions, as in periostitis or acute alveolar abscess, but would not necessarily follow from necrosis or passive alveolar abscess. In some cases there is usually fever, the pain occupying the whole side of the face, extending to the orbit, the nose and the frontal sinuses. The fever may be of the sthenic or asthenic form, but is generally of the latter variety, particularly if the individual has a constitution broken by privation, dissipation, venereal or scrofulous taint, or long residence in a vitiated atmosphere. There is usually great tenderness of cheek on the affected side, and sometimes the integuments will pit on pressure. A thin, watery fluid, very fetid, in many instances escapes into the nostrils from the sinus through the antral opening; this fluid being the modified secretion of the cavity.

Dr. Gross, in speaking of this disorder, remarks:—"The symptoms which are always less marked in the chronic than in the acute form of the malady, are not diagnostic, and the practitioner should therefore always institute the most thorough examination before he finally decides on their value. It is of great importance that this disease should be early recognized and properly treated, as its tendency, when neglected or mismanaged, is to run into suppuration or other mischief."—(Gross' System of Surgery, Vol. 2.)

The first indication in the treatment of this disorder, is the immediate removal of diseased teeth and roots, and to ascertain that these are present will frequently require the closet scrutiny and investigation; and on two different occasions I have removed the exciting cause (a diseased root

not visible with a glass) of inflammation after the patients had been ineffectually treated for a considerable length of time, the mouths having been repeatedly examined by the attending surgeons. So important is this examination considered, that some of the most prominent surgeons of this city direct, for all cases, a competent dentist to examine the mouth, and remove diseased teeth and roots, not being willing to trust their own judgment in the matter, and such should be the practice elsewhere, though unfortunately it is not universal.

General or local bleeding is also indicated, particularly if the symptoms are severe. Blood may either be taken from the arm, or by the application of leeches to the gums or cheek. The saline cathartics are exceedingly useful, and should be freely administered. If the inflammation has been induced by cold, the use of the diaphoretics, as Tartar Emetic or Dover's powders, would be indicated. Warm applications, as steam, or fomentations of hops, or the preparations of opium, are of value for the arrestation of pain; but I have found a plaster thickly spread with the extract of belladonna, (Emplastrum Belladonna, U. S.,) and applied upon the cheek, to give almost immediate relief; this is also useful in the pain arising from periosteal inflammation.

In the treatment of this disorder, general antiphlogistic means are called for, also observing closely that the general condition of the patient is as perfect as possible, as it cannot be expected that the inflammation will terminate by resolution if the system of the patient is weakened or the blood in a depraved condition. As an example of the importance of the above suggestion, I will revert to a case that came into my hands some months The patient was from St. Thomas, W. I., and stated to me that the physicians on the island had never seen a case of inflamed antrum, and he suffered for a long time, mentally as well as physically, and at last concluded to come to the United States for treatment. On the trip to this country he was very sea-sick, and when he presented himself for treatment, he was greatly debilitated, the inflammation of the sinus had passed on to the suppurative stage, and he was greatly discouraged. The loose and diseased teeth were first removed; he was placed upon the use of the tonic preparations of iron, a free opening was made into the antrum, a stimulant injection was given for that cavity, a detergent and stimulating wash for the mouth and gums; also, recommending him to live generously, go to public places of amusement, and not to avoid society as he had done. As his general health improved, the disorder became less troublesome, and finally I had the pleasure to see him quite restored to health after the lapse of about two months from the time of his first landing in this country.

[TO BE CONTINUED.]

FROM MY NOTE BOOK.

BY DR. H. SCOTT.

I have, from time to time, noted down a great number of cases of irregularity of the teeth, from which I select for THE TIMES, the two following:

Case 1st. Mrs. R., aged about 28, called at my office to have some teeth filled. Her lower teeth were in situe, except the left cuspid on the right side, which had never appeared; the first deciduous molar remained firm and healthy, with no indications that its wanted successor had ever been formed. All the teeth in the lower jaw were tolerably free from caries, and the gums were healthy. In the upper set, there was a wider departure from the normal state; the left cuspid was wanting, the bicuspids were reversed; the second appearing in front of the first, with its labial surface presented towards the tongue. The lateral incisor on this side was, in shape and size, about as large as a grain of rye, and stood out towards the lip. The central incisors were one-third larger than natural, and carious on their approximal edges. The right lateral incisor was healthy and in place; the deciduous cuspid remained firmly, with caries on its posterior edge. The bicuspids stood with their proper edges together, crosswise; that is, the posterior one presented towards the cheek, and the anterior one towards the tongue, their cusps being reversed correspondingly. This lady had but one dens sapientia, and that was on the right side above. There were no indications in her case that the rudimental pulps of the wanting teeth had ever existed, and she was not conscious that any of her milk teeth remained. This case presented about 15 years since. I afterwards saw similar deformity in other members of her family.

Case 2d. Master G. was brought to me for my advice in regard to his teeth generally. I found his mouth healthy, except incipient decay in some of the molars, and between the superior central incisors. But the chief matter which attracted my attention, was the position of his teeth; the deciduous set had all been cast off, and the second permanent molars were fully matured, but the arrangement of the permanent set was most comical. In the lower jaw and on the left side, the cuspid was the third from the incisors. The bicuspids, in their natural order, preceding it. The lateral incisor of the same side stood exactly in the rear of the central. On the right side, the second bicuspid was well fixed between the cheek and the first molar, which inclined towards the tongue, dividing the space between them about equally. The cuspid of this side stood obliquely forward, with its fang crossing at an acute angle that of the first bicuspid. In the upper arch, the arrangement was not less abnormal but different. The left side was right till we came forward to the incisors. The lateral of this side was conical in shape, and stood obliquely inwards; the right lateral, flat and thin, was situated edgewise, and seemed pinched between the central and bicuspid. The centrals were normal in size and symmetry. The cuspid of this side, perfect in form and size, held its position between the bicuspids.

The boy's teeth were as free from decay as is usually found at his age. He was of florid complexion and sanguine temperament, and enjoyed good health. I could not learn by inquiry that any of his deciduous teeth had been prematurely extracted, or that he had suffered much with toothache in his milk set. He said that his first teeth became loose, and that he had "pulled" most of them with a string. As far as I have had the facilities to observe, I have not discovered similar disarrangements in the teeth of any branch of the family to which he belonged. His age was about fifteen years.

LANCASTER, OHIO, February, 1865.

ACCIDENTALS.

BY A. B.

The following cases which came under my observation, I am inclined to report, as they may prove interesting to some of the younger members of the profession, and lead them to exercise greater care in operating.

Case first was of a little girl who received a slight wound in the cheek, just opposite the second superior molar, by the slipping of an instrument while having the tooth filled. A couple of hours after, while at play, she distended her cheek with air, and when she opened the mouth for the air to escape, the punctured cheek remained in its distended condition, much to the alarm of herself and parents. However, before the physician who had been summoned made his appearance, the swelling had subsided, and the case terminated. The swelling was no doubt caused by the air being forced through the wound and between the fascia of the cheek; it lasted nearly half an hour.

Case second, which occurred under similar circumstances, did not terminate so favorably. When the cheek was punctured, a few drops of blood escaped, which did not interfere with the progress of the operation, but when completed, and while the patient was rinsing the mouth, a bunch an inch in diameter appeared on the temple, and the cheek was swollen from the ear to the chin almost instantly. In this case, there was internal hemorrhage, consequently the swelling continued, while the color turned to a yellowish blue, and then black, disfiguring the patient for several days. Such a case might happen to any one, while a thousand such wounds might be made without such a result. Happening in the office of one whose reputation is established, little would be thought of it, but such a case in the hands of a young man, under some circumstances, might entirely ruin his practice.

PRILADELPHIA, June, 1865.

A RESUME OF METALS USED IN FILLING.

BY JAMES TRUMAN, D. D. S.

Is it possible that we shall, as a profession, ever reach a position when the necessity of a repetition of the same round of subjects, and of discussing modes of manipulation in operative dentistry, that have become so familiar to all of us, shall pass away and be left to the colleges for illustration? I hope so; but that happy realization has not been reached. I feel very sensibly, however, that an article devoted to re-casting points that have so frequently been illustrated, can have but little to attract the attention of the veteran in the service. As Dr. Tomes justly observes in the preface to his Dental Physiology, "that it was not written for the learned, but for those who have yet to learn;" so I may say for this resume, that it is written not for those who have scaled the heights, but for those in the valleys, who need the same help that we, in times past, have received from others. I am so frequently reminded that each year has its generation of growth in the profession, to travel the same worn path, to meet with the same difficulties, to share its similar aspirations, to rejoice in a higher grade of attainments, that I feel, however unpleasant the task may be, we are bound in duty to them to occasionally retrace our steps, to act the volunteer guide, and smooth, perhaps, many an otherwise rough passage. This, I presume, comprises the whole theory of teaching. However little we may be in the advance, that little we have no right to withhold from the struggling, faithful workman.

However interesting a review of the past manipulative history of gold foil would be, it is not my purpose at present to enter into it, but shall commence with that metal as we have it in its present condition of use. It is divided into common or non-adhesive foil, adhesive foil, crystal or sponge gold.

But a few years have elapsed since it was thought absolutely essential that all gold foil should present one quality, second only to its purity, that of extreme kid-like softness. To furnish this of even character, was found to be very difficult, if we may judge by the few who established a reputation in its manufacture, but unless this was accomplished, it was considered impossible to produce the best work.

Common foil depends for its success upon its adaptability to all portions of the cavity in which it is placed. This is true of all the materials used for filling, in a certain degree; but is absolutely required where each pellet is expected to retain its individuality, and mould itself to all the irregularities of surface presented. To the operator with non-adhesive foil, the form of using the gold was of first importance, for upon this depended very much the success of the operation. The days when "ropes" were

the all-essential to success, when pellets were to remove all difficulties, when cylinders were to smooth the way for those who could not appreciate the merits of the former have passed away, and we are bordering, if we have not already reached, an era when each of these may at times be valuable, but in which neither are essential to success. That the non-adhesive form of gold foil, as long as that metal is used in the profession, will remain as an invaluable addition to our stock of material, and which upon certain conditions could not be dispensed with; and while I am very willing to acknowledge a large amount of good work performed by it in the past, I still entertain the belief that its days of extended usefulness belong to the history of the profession, rather than to the needs of the present.

There are three conditions that I consider the use of non-adhesive foil cannot well be dispensed with. They are:

1st. When the flow of saliva is excessive and cannot be controlled.

2d. When the shape of the cavity is such that it is difficult or impossible to reach all parts with the plugger.

3d. When a filling of adhesive foil should, by carelessness or otherwise, be found defective at any point.

To use adhesive foil under the first condition, I regard an impossible feat, and that such a state of things is found in the practice of all there can be no room for doubt, notwithstanding the assertions frequently made to the contrary. By the use of pellets or cylinders, we may secure a satisfactory filling, notwithstanding an occasional submerging by the secretions of the mouth. Although eases will occur, when what are technically known as submarine fillings are necessary as a last resort, in the large majority, a constant change of napkins, with a free use of the syringe, to exhaust the saliva, will insure a filling, if not entirely dry, sufficiently so to secure the preservation of the tooth.

To meet the difficulty pointed out under the second head, and one by no means of uncommon occurrence, we can use the common foil, or slightly adhesive, to very great advantage. It is not unusual to find fillings, otherwise very creditable, defective at such points. The clogging of adhesive foil is a troublesome feature to the beginner, and it is in such situations the greatest care will be required to prevent it.

To overcome the third condition, that fillings, otherwise good, are often found in at the close of an operation, is one very difficult to remedy. At no part of a filling is this oftener met with than at the cervical wall of approximal cavities. Oftentimes nothing but an entire removal of the filling will remedy it, but where it is readily approached, make a cavity in the filling to cover the defect, and fill with the common foil. The same mode of treating a deficiency of gold at any other point can be adopted.

ADHESIVE FOIL.

This cohesive property of gold, engendered by a high degree of heat, was well known to the gold beaters, and to many members of the profession, prior to its introduction, but it was considered a detriment to the foil, rather than an advantage, and great efforts were made to remove it. It was not until April, 1855, that Dr. Arthur called attention to it in an article published in the "Dental News Letter," of that date, but the dental public were not prepared to accept it, and, as usual with all innovations upon the established order of things, met with opposition and ridicule. This is not surprising when we recall the class of instruments that had been considered necessary in the use of common foil. The serrations of an instrument had always been rated of secondary importance, and few were prepared to meet the difficulties presented, and after a few trials abandoned its use. But this distinguished and original observer was not to be deterred from the prosecution of his investigations, and the result of his labors was given to the public two years subsequently, in 1857, in a monograph, in which the whole matter was thoroughly discussed. From that hour to this, the subject has been one of constant disputation, but every year lessens the number of the opposition; and it must be a source of satisfaction to Dr. Arthur, that in so short a time the principle should be acknowledged, and practiced almost exclusively by the large majority of those who have attained eminence in this specialty.

Adhesive foil does not require for its use any special form or preparation of the foil. Any of the ordinary shapes of pellets, ropes, or cylinders may be used under certain general fixed principles that admit of no variation.

1st. To so loosely arrange the lamina of foil that the serrations of the instrument will readily pass through them.

2d. That whatever shape the gold may be made to assume, it must not be left of sufficient length to be endangered by the moisture of the mouth.

It will be found of importance that the folds of the foil should be as slightly compressed as possible, but at the same time no loose ragged edges should be left, a great annoyance in packing. The plan generally adopted, and probably as efficient as any other, is to tear or cut a third or half of the sheet of foil, fold it with the edges turned in, in the form of a very loose rope. This is cut in lengths proportioned to the size of the cavity to be filled.

All precautions possible must be taken to prevent moisture reaching the gold, by the use of wedges, rubber bands, napkins, &c. As before stated, absolute dryness is a pre-requisite to success; hence the impropriety of attempting to fill with a rope of several inches in length. The

liability to contact with moisture, is too great a risk to run, and far overbalances any loss of time encountered in picking up separate pellets.

The success of all our operations with this kind of foil is based upon its property of welding, or the cohesive attraction of the particles of the metal. It is therefore of first importance, as a preparatory measure, that we select certain points in the cavity to be filled to sink depressions or pits, technically called retaining points. These are to be made by drill or excavator, and so shaped as to be readily and compactly filled. The number and position of these pits must be determined by the judgment of the operator, always remembering to cut or drill in a line that will not encroach up the pulp cavity.

The majority of failures made, may be attributed to carelessness in attending to this important matter. With the foundation properly commenced, there need be no further trouble anticipated, always excepting the the danger from inroads of moisture. The base being properly prepared, we carry our pellet of gold on the point of the instrument to its place and secure it there, and pack the part first laid down before attempting to fold over another portion. This will effectually prevent clogging, and will insure perfection, as all parts of the filling are constantly in the view of the operator.

It would not be in keeping with the limits assigned to this article, to enter more fully into details of the whole manipulative process of filling with this foil, and fortunately its simplicity is such that but brief explanations are all that need be required. With an ordinary degree of intelligent and persistent practice, the minor difficulties can easily be overcome. That the art of filling is more readily acquired under this system than any that have preceded it, is proven by the very large number who rank amongst the best operators in the country, and who have attained their skill in a comparatively short period.

Having taken a general survey of the advantages of this kind of foil, we cannot do justice to the subject, without enumerating some of the difficulties and errors that are likely to occur in its use.

1st. A poorly serrated instrument is a prolific source of non-success. I prefer that the points of my instrument should be of good length, very sharp, well tempered and very smooth. Any neglect in these several particulars will cause, if not failure, a vast amount of annoyance. To insure against the possibility of this, the points of the instrument should be carefully examined by a magnifying glass, and any defects remedied. The serrations must be sufficiently separated to clear themselves freely. Their number must be regulated by the size of the cavity to be filled. The filling of a large one is greatly facilitated by the use of a broad plugger with a number of points. The bending of the points of a poorly

tempered instrument is a frequent cause of trouble, and will be indicated by dragging the gold from its position. This is frequently occasioned by passing the gold through the flame of a spirit-lamp. It will destroy the temper of the best made instrument. To obviate this, I have used for some years a stand with a mica top, on which the pellets may be laid and annealed.

2d. Carelessness in packing the gold in such quantities that clogging and consequent inability to reach distant points of the cavity is the result, and failure to fill sufficiently beyond the edge or wall, and want of caution in adapting the foil to the edge, are prolific sources of trouble. But all these difficulties are readily overcome by care, and are not inherent defects in the foil.

If simplicity is an important feature to be aimed at in all of our operations, there can be no question as to the merits of this peculiar form of gold; and although its discussion has almost closed in the journals, a large number of practitioners will be found scattered everywhere who still regard its introduction as an innovation upon the established order of things, and of no advantage in any sense. To those who will not use the means offered them, there is no other course but to continue blundering over old modes, until "time makes ancient good uncouth," even to their visions.

The question, whether there is really a welding property in gold, has not been brought forward. The change produced in the particles of gold by the annealing process, as exhibited under the microscope, is sufficient evidence to my own mind, and would be conclusive, if we had no practical illustration, aside from its use with the serrated instrument. But we are not left to speculation. Take two portions of non-adhesive foil, place them together, and go carefully over the surface with the finger or any other flat surface. There will be no cohesion of the particles. Take the same pieces, and anneal them carefully, join them, and go through the same process; with what result? An adhesion so perfect, that not only will it be found impossible to separate the sheets, but equally impossible to indicate the boundaries of either. With this simple illustration, I leave adhesive foil for a few words on

CRYSTAL, OR SPONGE GOLD.

This has had its day of excessive laudation and violent opposition, but has finally settled into an important position in difficult operations. When moisture can be entirely excluded, it can be manipulated with far greater ease than any form of gold; but it will not tolerate the least amount of dampness: hence, in cases where it would be most valuable, its use is rendered doubtful. I allude to large cavities that require considerable periods of time for their completion. The same general rules that govern adhesive oil will apply to it, and with conditions favorable, the very best work can

be made with both; but, as before remarked, there are cases when neither are admissible, and we must fall back to the old modes of cylinders and pellets, ignoring the adhesive property altogether.

True advancement, in my judgment, is founded in a wise eclecticism, which, while it values authority, cannot safely set aside anything that may not at proper times germinate much that may aid ourselves and patients. The metal next in order of use is

TIN.

This humble material has been persistently kept in the back ground, since the earlier periods of our professional history. A tin filling has been considered almost a synonym for contempt. It is satisfactory, however, to observe that with more attention to its valuable qualities, greater care is extended to improving the modes of manipulating it. Tin foil has been generally wretchedly made, and, until recently, there was not a foil in the market that could be denominated good.

The adhesive property of this metal is very slight, and I know of no means at this writing to materially increase it, although it has been a subject of repeated experiments. Heat has but trifling effect upon it. To produce the best results with this foil, more care is required than with that made from other metals. I am aware that this is contrary to the general opinion; but a large experience in its use has satisfied me of its correctness. Great care is required in preparing the foil for use not to get too great a width of strip. The narrower this can be managed, the better success will be attained. Tin will exhibit its highest adhesive qualities without folding; but, as it is sometimes inconvenient to use it in that form, I fold it simply upon itself loosely. It is then cut into proper lengths. Tin treated in this way can be moulded into any form as readily as adhesive or crystal gold, and the same general mode of procedure as applied to the latter will do for the former. Fillings of tin made with sharply serrated instruments are solid, and but little inferior to gold in their preservative quality. The temptation with this metal is to fill too rapidly. What is gained in speed is lost in solidity, and the ultimate result is degeneration, breaking down of the particles and general discoloration. I have no hesitation in asserting that tin foil, properly manipulated, would make good fillings for approximal cavities of front teeth, and thus save thousands that annually go to destruction for want of a cheaper material than gold. I am aware that in making this assertion, I am running in opposition to prejudices of long standing. Indeed, so much and so long has it been taught that nothing but gold should enter a front tooth, that it requires more than ordinary temerity to recommend to our poor patients any other material. I have long been satisfied that

this was one of the many untenable notions that it would be well that we rid ourselves as speedily as possible. But an essential pre-requisite to placing a filling in that position must be an ability to make it solid.

Of the metals that justly rank next to tin, if it is not its superior, is what is commonly known as

WOOD'S METAL.

The time that I have had this material in use has been too limited to test it, as time alone can do; but, so far as my experience has demonstrated, it is one of the most valuable additions to our stock of materials for filling teeth, and should receive the careful attention of those who desire to use a plastic material with all the advantages and none of the evils of amalgam. If anything I could say would induce any one to adopt it in preference to using the latter, I should feel that much had been gained for the interest of a suffering public. I recommend this metal the more freely, because its use will not have the tendency possessed by all plastic materials, of depreciating the quality of operations with other metals. The manipulation of this metal requires great care, combined with patience and experience.

The defects of the metal, as far as my observation has extended, are two. 1st. The heat required in its use. 2d. The impossibility of working it in the presence of moisture.

The first difficulty seemed to me an insurmountable objection, until, by use, the degree required was so much reduced, that the minimum amount for the metal, as at present prepared, was reached. I have since found less and less difficulty in this respect. Still, it must be acknowledged that upon very sensitive teeth, and upon those with the pulp nearly exposed, its use is attended with considerable pain. Much less suffering is experienced by covering the floor of the cavity with several layers of tin foil; but I would not recommend its use when there remained but a thin covering of dentine over the pulp. Further experience is necessary before we can take such risks.

The second objection is not so easily surmounted. I do not think it possible to fill a large cavity in the lower jaw when the secretion of saliva is excessive, and cannot be controlled with any certainty of its proving a successful operation. In consequence of this, I have experienced much trouble in securing perfect fillings where the cavity of decay extended beyond the neck of the tooth. This has been overcome, to some extent, by the use of a plate of tin foil overlapping the gum, but it must be acknowledged to be a very troublesome feature in the metal.

The explicit directions of the manufacturer, Dr. Wood, are ample for its use. Cut it into small square pieces, heating the instrument no higher

than necessary to soften, not melting the metal, and beginning at the edges, pack as carefully with these pellets as though they were gold or tin, and substantially in the same manner.

As I before remarked, I consider this a very valuable addition to our limited stock of material, and the inventor deserves more recognition, for the service he has rendered the profession by its introduction, than he has yet received, or from present indications likely to get.

AMALGAM.

It is not the intention of this article to take within its folds this material, neither will it hold it up to excessive execration. It has its uses, but they are limited in their extent, and should be persistently kept within these bounds. That amalgam has and will preserve teeth for years, is undoubtedly true; that it will discolor the tooth so filled, and render the mouth unpleasant to look upon, is equally true. That it can preserve teeth in good condition, I do not believe possible, except in the smallest number of cases. The shrinking of the metal and breaking away at the edges, is almost a necessary consequent upon its use. But I have long since ceased to regard any discussion upon this metal as very unprofitable labor. So long as disinclination to work forms a prominent trait in the constitution of all men, and the ambition to superior excellence the aim and desire of the few, so long will a plastic material of this character be used; and if it have no other merit, it may cover up, if I may be permitted an Irishism, a multitude of uncommitted sins.

TEMPERATURE AND PRESSURE IN VULCANIZING.

BY A. LAWRENCE.

Since the publication of my article on the use of the steam gauge in vulcanizing, the question has been raised, in some minds, whether I am not mistaken when I state that 320+ degrees of heat, produces 85 pounds pressure by the gauge; or, in other words, whether the table of temperatures and pressures then submitted is reliable. This query arises from the knowledge of those informed in such matters, that Haswell's tables are calculated from a vacuum, and that gauges for high pressures are so constructed as to require a force equal to one atmosphere before they begin to be operative; for instance, that at 212 degrees, when steam begins to form, the gauge is only ready to move, and is therefore to be reckoned 15 pounds light when used in connection with the tables.

Theoretically, this view is undoubtedly correct, but "facts are stubborn things," and do not practically and fully coincide in such view, as I have abundantly satisfied myself by actual experiment; the modus

operandi being as follows:-my vulcanizer, one of the first Warren pattern, about the size of a straw bee-hive, was originally furnished with a thermometer, safety-valve and whistle, which last two appendages I soon dispensed with as useless, and "run the machine" for two or three years with the thermometer only, as is now the common practice. Wishing to avoid the inconvenience, trouble and expense of the thermometer from breaking, and ununiformity of graduation, I next, at the suggestion of my son, Dr. G. W. Lawrence, attached a steam gauge, still retaining the thermometer, which I had carefully adjusted and tested to make all sure, with the intention of discarding the latter so soon as by comparing the two instruments, while in operation, the proper pressure by the gauge could be ascer-. The vulcanizer being now supplied with both thermometer and gauge, was warmed up and proceedings watched; the result of which was, that at the lower temperatures the gauge was light, but at from 280 degrees onward the two instruments got reconciled to each other, and agreed very well, showing 85 pounds pressure by the gauge, at a temperature of 320 degrees, thus verifying so much of the published tables as are of any practical value to the dentist. I tried the experiment over again, using another gauge, with the same result.

Since my attention has been called to the matter again, I have experimented in the same direction, in presence of different members of our fraternity, with three different thermometers, (Whitney's,) one of which experiments gave 57 pounds pressure at 280 degrees, 73 pounds at 290 degrees, and 90 pounds at 300 degrees, which was as far as I cared to investigate the sulect at that time. I make no comments here, further than to suggest that some of our short-time friends have probably got just such a thermometer, and can, of course, save time at the risk of charred work, and of having their heads blown off. The two other trials agreed almost exactly with those to which I have before referred, thus showing that so much of Haswell's tables as I have made use of in connection with this subject is sufficiently correct; theories to the contrary notwithstanding. The fact that my brother, in Philadelphia, finds it necessary to vulcanize at 335 to 340 degrees, while the same thing is done in some other, or even the same place at 300 to 320 degrees, and in about half the time, suggests a lack of uniformity in the graduation of our thermometers, which, if they continue to be used, should be promptly remedied. The gauge is the thing for uniformity, safety and comfort in vulcanizing.

As I shall probably henceforth consider this subject in its application to dentistry quite exhausted, it only remains for me to thank my confreres for their patience with me thus far.

NITROUS OXIDE AS AN ANÆSTHETIC.

BY H. C. ROCKWELL, D. D. S.

While I do not pretend to advocate the indiscriminate use of any anæsthetic, or to state that any, however good, may be used in all cases with safety, yet I have seen so many objections to the use of nitrous oxide, that seem to me fallacious, that I will consider some of them, and try to answer somewhat as I find consistent with my experience.

One objects to the stertorus breathing, (or gasping as he terms it,) which is shown by the patient while under its influence. This is merely consequent upon the position of the mouth and throat while in a state of insensibility, and is no more dangerous than "snoring" in sleep, and should be no more feared. Another states that its effects are due to the carbonic acid thrown from the lungs at each exhalation, and that it alone will not produce anæsthesia. This, even if we did not examine the known difference between its effects and those of carbonic acid, would find sufficient refutation in the fact, that anæsthesia is more quickly produced by inhaling from a large than a small bag, thus breathing less carbonic acid.

Again it is stated that its effects are essentially the same as those of ether and chloroform, with these two drawbacks upon its use, viz:that the patient is compelled to breathe more or less carbonic acid, and an atmosphere deprived of oxygen. Now there is no doubt that this as well as ether and chloroform are stimulants, yet this possesses a peculiar property, which, setting aside the great law that all stimulants are followed by a corresponding depression, stimulates the patient to insensibility, and without any decrease of vitality leaves the state the same as when the exhibition was commenced. This is supported by DP. George J. Ziegler, who says: "the physiological influences of nitrous oxide are of a peculiar and striking character, for though like some other agents, it exerts a very energetic and decidedly stimulant action upon the animal economy, yet this is in general so entirely distinct from all other excitants, as to be quite unique;" also, "not being followed by any reactive languor or depression, so common to ordinary stimulants." Thus while the three produce unconsciousness, the effects are "essentially" different; for while one produces its effects by elevating the vital action, the others accomplish the same result by depressing it. This has led to the recommendation of the "gas" in cases of asphyxia from chloroform, which certainly would not be applicable if their effects were the same. The drawbacks upon its use may be avoided by allowing the exhalations to pass into the air through a proper mouth-piece. Another objection is, that the patient is entirely shut off from atmospheric air when breathing from a bag. nitrous oxide is a supporter of combination, (and of course then of respiration, for the process is the same,) and an animal placed in it, like one in

an atmosphere of oxygen, will die merely from over stimulation. The vapors of ether and chloroform are not supporters of combustion and respiration, and an animal placed in them will die of suffocation. This, while it would be a strong objection to ether and chloroform, had they to be administered in this way, does not hold good against nitrous oxide, as it is in itself a supporter of life; and while I consider it perfectly safe to a healthy patient, I would take especial pains to give it to no one having any organic disease; thus having secured confidence in myself, I should try and impart the same to the patient, as in this way its exhibition is much more pleasant.

In conclusion, I would say, that having used this anæsthetic for more than a year, with every success, that I consider it superior to ether or chloroform for the purpose of extraction, with these three exceptions, viz: it is more difficult to make and keep, it is more expensive, and its effects pass away more rapidly.

THERESA, N. Y., June 1st, 1865.

DENTAL SUGGESTIONS.

BY JOHN D. WINGATE, D. D. S.

Dentists, hundreds of miles from dental depots, will, when out of nerve brooches, find that sewing needles make a good and very cheap instrument, which may be barbed and hooked. To give body to the annealing part, a package of No. 9 or 10 Sharps, with paper, may be put into a piece of sheet-iron, turned over so as to hold them, and left heat to a cherry-red, then cooled very slowly, will soften them perfectly without blackening, as oxygen has very little chance to change the surface. On the eye end, a little soft solder may be stuck to be retained in the socket. For nerve plugging, a larger needle may be used.

As it is difficult to get good cotton now for drying purposes, old linen rags are much better, and even preferable to any of the prepared paper, as they are stronger; cut into strips, tape fashion, and tear off what is needed.

By the recommendation of Dr. H. F. Vallerchamp, I find liquid silex the best cast varnish preparatory to vulcanizing. It leaves a much more beautiful surface than collodion. In varnishing or oiling impressions to get the counter-cast, it is best to hold them upside down to prevent the varnish or oil from becoming too thick in the indentations.

Partial impressions may be generally got out of the mouth without breaking, by inserting a squarely-bent wire loop into the impression cup through holes an inch apart, and opposite the highest part of the palate parallel with the mesial line. The ends of the wire, the under side of the

cup to be bent down to hold. The height of loop inside the cup should be over half an inch, so as to embrace a goodly thickness of plaster. To remove the cup, straighten the wires, and the impression may be taken out. The wire should be No. 13 annealed iron. The wire should work loosely in the holes, and kept to its intended place with the fingers, from below the cup, while filling with plaster.

The screws of the vulcanite flasks seem, after a few times using, to get too tight; this may be remedied by passing them through a screw plate. The packing around the thermometer is difficult in some boilers to keep tight. To prevent the packing pressing out, small washers of tin plate may be put above and below the packing around the thermometer tube.

BELLEFORTE, PA.

A STRANGE CASE.

BY H. SCOTT, M. D.

The following case occurred to me in 1839. Mrs. S. desired me to call at her house, and remove an aching tooth. The one indicated, was the second left upper molar. The gums were inflamed and sensitive, but the tooth was not carious, nor was any one on that side of the jaw; although upon touching them, they were found to be loose. There was not much absorption of the alveolus. The lady was in delicate health, and insisted upon having the tooth removed. I yielded to her wish for reasons of my own. I took hold of it with the forceps, and to my great confusion and astonishment, upon giving it a slight twitch, the two molars, den sapientia, and second bicuspid came away with their entire alveoli. The amount of force used, I am sure, did not exceed five pounds. I hastened to wash the part that had been removed free from blood, when I was surprised to see that there had been no attachment of the alveolar substance to the maxillary bone, except the thin edges, not exceeding the thickness of medium paper. The whole mass slightly dipped into the maxillar, both surfaces being very smooth and covered with periosteum, in which bloodvessels were visible to the unassisted eye. The alveolis were adhering to the fangs when I attempted to separate them, and I could not see that there was any periosteal intervention. The hemorrhage was very profuse, both from the capillaries and dental arteries, so that I had a great deal of trouble in arresting it. I feared to attempt the removal of other teeth, and relied on topical and general treatment to restore her gums to a comparative degree of health. The lady was of strumous habit, and died three years from that time with pulmonary disease. I presented the specimen to a professor of the Cincinnati Dental College. Did any one ever see a similar case?

1RON. 29

IRON.

BY T. L. BUCKINGHAM, D. D. S.

A short article on this metal may be interesting to the readers of the DENTAL TIMES. It is so much in use, and so constantly met with, we scarcely ever think of its history, properties, or chemical combinations; and so necessary in the arts has it become, that a nation's wealth is now estimated more by the quantity of iron it consumes, than it is by the precious metals it produces.

The question is not easily answered, how and when the ancients began to use iron, either as a metal or in the form of steel? Some writers think that it was not known and used at a very early period, while others contend that the metal was not only known, but was in general use at the very earliest period in the world's history. It was certainly known and worked by some of the nations, as early as any of the other metals; for we read in Genesis iv., 22, "And Zellah, she also bare Tubal Cain, an instructor of every artificer in brass and iron."

Thompson, in his history of chemistry, says: "That in those early days, it is possible native iron may have existed as well as native gold, silver and copper, and in this way Tubal Cain may have become acquainted with its existence and properties." Mr. Napier, in commenting upon this sentence, writes: "This is, however, begging of the question to get over a difficulty; the difficulty being an unwillingness to allow the inhabitants of the earth, then living, to possess a certain kind of knowledge. The suggestion is not very happy, seeing there is scarcely an instance of iron being found native, and only in small portions diffused through rocks, which, even allowing it to have been more abundant in the early ages of man's history, the difficulty of getting it from the matrix would have been about as difficult as reducing it from the ore, except we allow the knowledge of the magnet by which it could be gathered from the rock after being ground, but this would be an admission equally baseless."

After the flood, we find iron frequently spoken of in the Scriptures. "Iron is taken out of the earth," (Job, xxviii., 2,) and Moses uses the iron furnace as an allegorical figure of expression of intense suffering. "But the Lord hath taken you, and brought you forth out of an iron furnace," (Duet., iv., 20.) In referring to the ore in Palestine, "Out of whose hills thou mayest dig iron and brass," (Duet., viii., 9.)

But it is not necessary to refer to more passages to show that iron was known and used in those early times. If we consider the progress they had made in the arts and sciences, especially in architecture, it would be surprising if they had not discovered a process to reduce the ore, and obtain a metal that was essential in building.

Wilkinson, in his Ancient Egypt, gives some account of the iron and copper mines of that country. "Iron and copper mines are found in the Egyptian desert, which were worked in old times, and the monuments of Thebes, and even the tombs about Memphis, dating more than 4000 years ago, represent butchers sharpening their knives on a round bar of metal attached to their aprons, which, from its blue color, can only be steel. And the distinction between the bronze and iron weapons in the tombs of Rameses III., one painted red and the other blue, leaves no doubt of both being used at the same period."

That tools of iron or steel are so seldom found about the ruins of ancient buildings or mines, is readily accounted for by the metal being so easily oxidized when exposed to the air and moisture, which in a few years destroys all traces of it. Layard discovered a quantity of iron amongst the rubbish in excavating at ancient Nineveh, in which he recognized the scales of the armor represented on the ancient sculpture. "The iron was so covered with rust, and in so decomposed a state, that I had difficulty in cleaning it from the soil."

Although iron and steel were known by some of the ancient nations, they did not come into general use until about a century before the Christian era, and the natives of this continent did not use them when it was discovered, while the ore was laying around in the largest quantities. But as it is not my intention to write a full history of the metal, we will pass on to a brief outline of the ores, and the process of reducing them.

[TO BE CONTINUED.]

DIED, in Lowell, Mass., April 19th, of congestion of the lungs, Dr. Wm. D. Vinal, aged 54 years, 11 months. He had been a practitioner of dentistry in this city for nearly twenty years.

At a meeting of the dentists of Lowell, the following resolutions of respect were adopted:

Whereas, it has pleased the Overruling Providence to remove from our midst Dr. Wm. D. Vinal; therefore

Resolved, That by his death the dental profession has lost a conscientious and worthy member, and Lowell an exemplary and upright citizen.

Resolved, That while we sympathize with his family and friends, in this their sad affliction, we rejoice that they have the consolation of knowing that he had the Christian's hope of a glorious immortality.

Resolved, That a copy of these resolutions be tendered to the family of the deceased, and also published in the papers of the city, and in the various dental journals.

A. LAWRENCE, Chairman.

G. A. GERRY, Secretary.

AMERICAN DENTAL ASSOCIATION.

The fifth annual meeting of the "American Dental Association," will be held at Chicago, Ill., on Tuesday, July 25, 1865, at 10 o'clock, A. M.

It seems almost unnecessary to impress upon delegates the importance of their presence, since the very large attendance last session was a signal demonstration of the interest and sympathy of the profession, which, of itself, will undoubtedly prove sufficient to establish the popularity of an Association based upon representative interest.

The preparation of voluntary essays is, at this time, urged upon delegates not occupying positions upon any of the various committees, as every such contribution will serve to render the proceedings additionally interesting and profitable.

In connection with the ordinary exercises, clinics will be held, and various dental operations performed.

GEORGE W. ELLIS, Phila., Cor. Sec.

AMERICAN DENTAL CONVENTION

Meets the first Tuesday in August, at the White Sulphur Springs, in Ohio. This Convention has had a larger attendance than any other dental meeting since it has been established, and as it meets this year at one of the most pleasant places in Ohio, the Convention will probably be larger than it ever has been.

Wditorial.

SALUTATORY.

The present number commences the third volume of the Dental Times, and, as customary, the publishers consider it appropriate to take retrospective glance at the past, as well as to form plans for the future. In a former communication, at the commencement of one of the preceding volumes, we promised to the dental public a quarterly magazine devoted to the interest of the Dental Profession, and composed exclusively of original articles on dental subjects. We have adhered to that plan up to the present time, through the kindness of our contributors, (to whom we return our thanks,) and our own exertions; and we believe we can justly claim to have furnished more original matter for the price paid than any dental journal published in the United States. We still intend to adhere as closely as possible to the plan previously adopted, viz: the presentation of original communications; but shall modify it so far as may seem

advantageous to our readers, by making selections from our American and foreign dental publications.

In conclusion, we urge those interested in dental advancement to send to us their accumulated knowledge on dental subjects, that they may in part return that information which has been freely given to them, and which may prove not only profitable to those who give, but as well to those who receive. The subscription price to the Dental Times will remain as formerly, at the low price of one dollar per annum, in advance. Communications to be addressed to Dr. T. L. Buckingham, 243 North Ninth street, Philadelphia.

A NEW INSTRUMENT FOR THE LABORATORY.—Dr. John Q. Birkey, of this city, has constructed an apparatus for heating water, sets of teeth preparatory to soldering, for tempering instruments, &c.; it has a sand bath, a very useful appendage, attached to it. The instrument is small, simple in construction, not liable to get out of order, produces perfect combustion, consequently evolves the greatest amount of heat that can be obtained from the combustible. It is decidedly the best apparatus that we have yet seen for generating heat from gas.

E. W.

We commend to notice in the present number a communication on Nitrous Oxide, by our former student, Dr. H. C. Rockwell; though differing decidedly from him in his conclusions as to its safety and value as an anæsthetic, we consider it to be the most logical and reasonable article yet presented to the dental public in favor of Nitrous Oxide. G. T. B.

For the information of those who intend to be present at the next annual meeting of the American Dental Association, to be held in Chicago, Ill., we would state that we have been informed that communication is exceedingly easy between that point and White Sulphur Springs, Ohio, so that those desiring so to do, may be present at the meeting of the American Dental Convention the following week.

G. T. B.

The Dental Quarterly, Vol. IV., No. 2, comes to us as usual laden with valuable dental information. It is worthy of the enterprising firm, Messrs. Johnson and Lund, from whom it emanates.

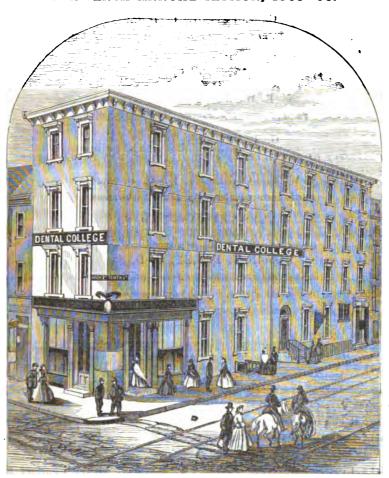
G. T. B.

The second annual meeting of the Central States Association of Dental Surgeons will be held in this city, at the Kentucky Medical College, commencing on Tuesday, July 18th, at 10 o'clock, A. M.

W. H. SHADOAN, Secretary.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE TENTH ANNUAL SESSION, 1865-'66.



TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., G. R. MOREHOUSE, M. D., ELLESLIE WALLACE, M. D., THOMAS WOOD, BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S., CHARLES HAMILTON, SEC'Y.

8. DILLINGHAM, D. D. S.,

FACULTY.

- J. D. WHITE, D. D. S., EMERITUS PROFESSOR.
- C. N. PEIRCE, D. D. S.,

EMERITUS PROFESSOR OF OPERATIVE DENTISTRY.

T. L. BUCKINGHAM, D. D. S.,
PROFESSOR OF CHEMISTRY AND METALLURGY.

E. WILDMAN, D. D. S.,
PROFESSOR OF MECHANICAL DENTISTRY.

G. T. BARKER, D. D. S.,

PROFESSOR OF PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

W. S. FORBES, M. D., D. D. S.,
PROFESSOR OF ANATOMY AND PHYSIOLOGY.

JAMES TRUMAN, D. D. S.,

PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIVE DENTISTRY.

J. M. BARSTOW,

DEMONSTRATOR OF MECHANICAL DENTISTRY.

The Lectures to the Regular Course will commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course, (Demonstrators' Ticket included,) - \$100

Matriculation, (paid but once,) - - - 5

Diploma Fee, - - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Tenth Annual Session, 1865-'66.

The tenth annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed a the College are entirely gratuitous, a superabundance of patients invarably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of sharge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

COURSE OF LECTURES.

CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can be performed before the class.

DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration.

At the Clinic the incumbent of this chair will also demonstrate before the class the various operations described in his course of lectures.

MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, microscopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissectingroom in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

REGULATIONS.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College; five years' practice, inclusive of the term of pupilage, will also be considered equivalent to the first course of lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

DENTAL TIMES.

Vol. III.

PHILADELPHIA, OCTOBER, 1865.

No. 2.

SPECIALTIES AND SPECIALISTS IN MEDICINE.

BY DANIEL BRAINARD, M. D.,

Professor of Surgery in Rush Medical College, Chicago.

Delivered before the American Dental Association, in Chicago, July 28th, 1865.

Gentlemen of the American Dental Association:

It gives me great pleasure to meet here the members of so honorable and useful a profession as yours. The profession of dentistry is one of very modern origin, and is that branch of the medical profession which owes its development and perfection most essentially to our own country, and is, indeed, I think I may say, the one branch of the profession in which we Americans can claim especially the pre-eminence. To be an American dentist is a recommendation in all the principal cities of Europe, and although the medical profession in general, and the surgical department especially, has an honorable position in the literature and among the profession in foreign countries, it can hardly be said to have a claim to the title of any pre-eminence.

I have said that your profession was of comparatively recent origin. It is almost, I think, within the memory of many persons here present when it was regarded as merely a mechanical operation, little better than the higher branches of mechanical employment. Step by step it has developed itself to a degree that, in perfection, in usefulness, it does not, in my opinion, rank second to any of the single branches of medical or surgical science, [applause;] so that at the present day, to be without a dentist would be to be without one of the essentials of civilized life. [Renewed applause.]

Now, in speaking of its having a mechanical origin, I do not intend anything disrespectful to it. My own especial branch of the profession is surgery, and, I might say, a part of surgery; and it is not very long since surgeons, as a class, occupied a position far less honorable and important than that occupied by dentists of the present day. In the middle ages in Europe, so called, or rather in the latter part of the middle ages, from the fourteenth to the end of the fifteenth century, or thereabouts, surgical operations were performed by barbers. There was no distinction

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between those that performed a surgical operation and those that cut hair, and curled hair, and powdered hair. The duty of the surgeon was considered to be to perform an operation when he was directed, and as he was directed by a physician, and, when he had performed the operation, to retire and leave the case to the physician. And it happened, after a certain period of time, that these operators acquired a certain amount of knowledge beyond the immediate needs of operating, and were called upon to advise about operations, and about the treatment of cases after operations. And this was considered a great innovation upon the profession. It was considered something outrageous and disgraceful to the profession; and the man who should have consented to meet a surgeon in consultation, would have been expelled from the faculty for consulting with a quack. I have in my library a work published to the Prefident of the Faculty of Medicine, in Paris, entitled the Brigondage of Surgeons," setting forth that they were asserting claims which of allowed, would be the destruction and disgrace of the medical profession.

This comparison I build forward for the purpose of sustaining the assertion that I make, that the difficulties under which the dental profession labors are nothing new. By speaking of the difficulties under which you labor, I mean this: the difficulty and length of time which it has taken for the honorable, and educated, and competent men of that profession, to assert and maintain full equality in professional standing with members of the medical profession who practice other branches of it. That difficulty has existed in regard to every particular branch of the profession that has at any time been embraced by any particular class of men, and is not peculiar to the dental profession. It results from that deep-seated prejudice, for I can call it by no other name, that has existed from the earliest times, and is inherent apparently in the nature of every profession, and that is, to resist innovations or changes in regard to the doctrines or the practices of that profession. This peculiar aversion to changes results from the nature of professional education, and is one of those things that is treated of by Lord Bacon in his Novum Organum, under the name of "Idols of a Class," or those things which prevent members of a particular class from seeing the truth in regard to their own profession. It is, and has been, one of the great obstacles to the progress of the medical profession. It is an obstacle which at the present day is partially, but only partially, overcome. It is the thing which has prevented a large number of men of genius and industry in the profession from embracing and following out the study and practice of a particular class of diseases, in such a way as to have perfected our knowledge of the nature and treatment of such diseases.

Now, the principle that I wish particularly to assert here is this, that

the medical profession, in order to be most useful, in order to acquire its due influence over the community, in order to perfect its knowledge of the nature and treatment of diseases, must adopt a special course of study; each individual member embracing that course which he judges on the whole to be best adapted to his faculties, and leaving out, to a certain extent, others for which he has no qualifications. I advocate special studies and special practice; and, although the words have been somewhat discredited, I advocate "specialties" and "specialists."

Now, I undertake to say, that the very great opposition which this doctrine has met in the profession, is not founded upon reason or justified by the experience of the profession. It is an opposition which is working to the disadvantage of the profession as well as the public, and to the manifest disadvantage of a very great number of the individual members of the profession; and therefore I wish to insist a little upon the point.

What are the natural divisions of the science and practice of medicine? Is there no natural division? I hardly think that any one would be so bold as to assert that there are, and ought; to be, no natural divisions. For a long time, when the science of medicine was in a very rude and imperfect state, the members of that profession did study and practice all its branches; and in the older works or surgery, pharmacy and chemistry were as much treated of as the operations of surgery. Still, even at that time, there was the commencement of division, and the first was into pharmacy, surgery, and obstetrics. The next division which came was into medicine and surgery, surgery being, as I have stated, the mechanical application in the manner already indicated. At a later period, there commenced to be apparent the distinction between the obstetrical department of the profession, and separation between pharmacy and medicine was accomplished entirely. By degrees the distinction between obstetricians and medical practitioners came to be recognized in particular localities, in large cities especially, to a very considerable extent; so that medicine, towards the middle of the last century, might be said to be divided into pharmacy, medical practice, properly so called, surgery, and obstetrical practice; whilst yet it remained true in regard to the greater portion of the civilized world-the country in general, in America, as well as in Europe—that the larger number of practitioners continued to practice all its branches, to collect and prepare their own medicines, to practice pharmacy, surgery and obstetrics. And at the present day, this is the case with a very large part of the profession throughout the civilized world.

Now, it is manifest, all experience and reason show, that men who practice medicine in this way, practice it only in a rude and imperfect manner; that they neither understand pharmacy, nor medicine, nor obstetrics;

that, from the nature of things, they are incapable of acquiring skill in any one of those branches: that it is absolutely necessary, in order that there should be any progress in regard to the science or practice of medicine, that some of these should be excluded, and others proceeded with especially, by each individual member of the profession.

Let us examine the question for a moment. The dentists, as a body, have, according to my own knowledge and observation, perfected the mechanical means of performing operations beyond what has been done in any other branch of the profession. They are better mechanics than the surgeons, and their instruments for accomplishing the different objects which they have in view are more numerous and better suited to their purpose than are the instruments of surgeons. Now this is essential to the proper performance of deutal operations. And how has this happened? It has been simply that there have been dentists, as a class, who have devoted their attention to that purpose; and we, as surgeons, never could have invented or perfected these instruments, and consequently could never have perfected dentistry. And that division of labor is a thing which, at the present day, is manifestly necessary, and which no one now disputes.

In regard to surgical instruments, there are two departments in which they have been singularly perfected. The one is in regard to those instruments which are used for crushing urinary calculi, which are the most admirably adapted to their purpose. How did that come about? Three men of genius at the same time happened to devote their whole attention to that thing, the crushing of stone, and they especially periected those And without that perfection of these instruments, the crushing of urinary calculi must have remained for ever, as it had up to that time, a mere phantom floating in the mind without any practical application whatever. Therefore it was necessary in this particular that there should be special studies. The other branch in which I consider the mechanical means to be wonderfully perfected, is that regarding instruments for operations upon the eye. These instruments have been brought to such a degree of perfection, of delicacy and accuracy, that they are capable of accomplishing things almost inconceivable, and accomplishing them regularly, constantly, and without difficulty or danger. Now, how has this happened? It has happened in the same way; there have been a class of men who have devoted their attention to that subject exclusively, have thought of nothing else, have worked at nothing else but the perfection of means for the accomplishment of that which they saw before them to be done. But when you come to other things that have not been made specialties, the condition of our science is singularly rude and imperfect. There is nothing in our science at the present day which has

the slightest claim to be a respectable apparatus for the treatment of fractures. Particular individuals, by the attention which they have paid to it, and by an excess of superior mechanical talent or ingenuity, have been able to accomplish with the instruments which they use a considerable degree of success; but there is no instrument for any given fracture that can be mentioned, that can be taken by a person of ordinary good education of the profession, and put upon the member in such a manner as to accomplish any perfect result. The greater number of instruments which are used in the profession, for fractures of the leg, and called "fracture boxes," are not anything better than dry goods boxes, [applause,] and simply serve to accomplish the result of concealing from the surgeon the position in which a limb may happen to lie. [Renewed applause.] What is the reason of that? The reason is, that there never has been as yet any instance that a man devoted himself to fractures as a specialty, and nothing else, and this is the one branch in which a specialty is most needed. They are the species of accident which are the most frequent, and which disable a man more than any other, and entail untold miseries upon him if unskillfully treated; but the instruments for the accomplishment of this purpose never will be reduced to any great perfection, until it shall be known that the devoting of time and talents to one subject leads to honor, and not to being partially thrown out of the profession. [Applause.]

If I should be unfortunate enough to meet with a fracture of the jaw, the first thing I should do would be not to send for a surgeon at all. I should send for a dentist. [Cheers.] They have directed their attention to the mechanical means and apparatus necessary for holding the jaws in their place, to such an extent, that they are better qualified to make them than surgeons are as a general thing, and, perhaps I might say, more than any surgeons are.

I might go on and point out to you that with regard to no one thing about them are the instruments used by surgeons the best adapted to their purposes.

We are disputing, at the present day, all over the world, what kind of sutures are the best to use. A great many of our instruments for the purpose of ligating arteries and performing similar operations, are singularly rude and imperfect, and their imperfection is only remedied by the skillful use of the fingers of the surgeon.

How is this to be remedied? It is to be remedied, gentlemen, by special study; by the profession changing its views upon that subject, and saying to the young men, when they are entering the profession, and when they are about to leave the schools, that it is better for them to devote themselves to some particular branch of the profession, and try to understand

it. I often have young men from various parts of this country, who are here to visit the West for the purpose of locating themselves in their practice. They very frequently come to Chicago, and we are always glad to see them. We are very proud of our city, and if you want to get into the good graces of any Chicago man or woman, you have nothing else to do but to tell them it is a nice place. [Laughter.] But these young men come here, and they say: "What kind of a place is Chicago for a professional man?" Now that is a very hard question to answer, because politeness does not permit me to ask another question. I could say to the young man, that if you know any one thing better than the generality of the profession, it is a good place for you; but if you do not, it will be a bad place for you. And for those young men who are incapable of applying their knowledge in such a way as to earn their daily bread, incapable of using their knowledge for the benefit of any particular class of men, so as to make it desirable for them to call upon them, Chicago is not the place. That is the difficulty under which members of the profession labor when they would enter into practice.

How is this to be remedied? It is to be remedied, in the first place, by acting upon public opinion. The profession which listens with leaden ears to the propositions which come from members of it to change the time-honored usages to which it is subjected, is sensitively alive to intimations which come from the people who employ them. Public opinion in this country is law, and in order that the laws be made good, public opinion must be enlightened. Individuals are powerless, but ideas are irresistible; and the way to remedy it is to take the idea or fact that, in order to make the profession useful and powerful, it must be developed and perfected in all its branches, constituting each one of these branches one body, each part of which co-operates in its proper sphere and most useful manner in advancing the interests of the whole profession. [Cheers.]

Now, in saying that I am in favor of special studies and practice, in that way, I do not commit myself to anything; and the profession won't regard this as anything but a "glittering generality." Therefore, I state, that I think there ought to be dentists to attend to the teeth, oculists to attend to the eye, aurists to attend to the ear, and special physicians to attend to the diseases of the heart and lungs, and make the physical examinations which are so difficult, and a special class who will be able to use the microscope for special examinations; that there should be not only practitioners of obstetrics, but those especially devoted to different branches; I mean that the incapable obstetrical practitioners never should be allowed to use instruments; that there should be men qualified for that. And then in regard to surgery, that it should, in addition, have a number of branches. That in these there should be one branch devoted

especially to the treatment of fractures. That there should be another branch devoted to the treatment of tumors, without absolutely circumscribing these departments by definite lines at the present time. When that is done, then the profession will cease to occupy the principal part of the time in its meetings or associations with quarreling with quacks. The man who is thoroughly accomplished in any particular department of his profession, is very little troubled by quacks. [Applause.] Then the public will come to know the usefulness of the profession.

The dental profession, at the present time, is not consulted in one case in a hundred, or one in a thousand of those which require the care of a dentist. That is because the medical profession is not educated to the proper standard, and does not tell these people, as they ought to do, that in cases of difficulties about the teeth, they should apply to a good dentist.

The same is true in regard to surgery. There are operations enough that ought to be performed, in every populous county in the State of Illinois, and which are not performed, to give employment to all the surgeons in those counties. They do not know that there is any man who applies himself to that particular kind of disease, and when they look around for information they look to that particular kind of advertisements in the newspapers; and you know what kind of information they get there. [Laughter.] I repeat, then, that the way of progress in the medical profession is in the way of special studies.

How is this to be brought about? I would not have you to suppose, by any means, that there should be a special school for every department of medicine and surgery. On the contrary, I would very much prefer that there should be no division whatever. And if I might be permitted to express an opinion upon a subject which may be delicate, it would be an opinion with regard to the dental profession, that they had better not be separated from the medical profession. I think it would be better for them to receive their education in the same schools and to the same extent as other members of the profession. And I think that in order to effect their education there ought to be and will be, perhaps not in my day, but there will be professorships of diseases of the teeth in every respectable medical school in Christendom. [Cheers.] What is taught at the present time in most medical schools in regard to teeth, is the order and time of dentition; and then, in case the child is sick during that period, that the gums are to be lanced. [Laughter.] In some schools there is a little advance upon that. But there is no medical school, so far as I have any knowledge, where the diseases of the teeth, and the causes which produce them, the means of obviating them, the irregularities of the teeth, and the means of correcting them, the best thing to do in case of any particular appearances of the teeth; I am not aware that in any institution. even to that extent, is it properly taught.

Of course there must be colleges of dental surgery, so long as dental surgery cannot be learned elsewhere. This is a want, and, until we can supply it, the practice of surgery must be necessarily more or less imperfect. It is necessary, in my opinion, that the dentist should be an educated physician. [Cheers.] It is necessary that he should understand the structure of the body beyond the teeth. [Cheers.] And I will mention this curious thing about anatomy and quackery. Anatomy in itself would not seem to teach a man much of a practical nature; but I have never yet seen an accomplished anatomist who was a quack, or a quack who was an anatomist. There is an incompatibility between the pursuit of that sublime science, which makes the two incompatible; and if you will fetch before me any man, whether he be a dentist or otherwise, and he will tell me all that is known in reference to anatomy, I will accept that man as a scientific man, without asking him another question. [Laughter and applause.] That is the foundation of all medical science, and therefore you must have that; and you must have, in addition to that, the knowledge of physiology. You must have an especial knowledge of the action of medicines, as they operate upon the human system, not to speak of those other branches of science and accomplishments, outside the profession, strictly so-called, which are so necessary to give influence to science, to render man happy, to adorn his life, and make him a gentleman. I would have, in the first place, all the different classes of the medical profession educated in the same schools, to the extent of acquiring this general knowledge of which I have just spoken; and then I would have in each college not only a professor of diseases of the teeth, but I would have a special professor with regard to a certain number of other branches, at present of the diseases of the eye and ear, and of the nature and treatment of deformities of every kind. These branches have all acquired a degree of development which requires them to be treated from separate chairs; and when the student had got sufficiently accomplished in general principles, I would have him adopt that branch which he proposes to follow, and devote his special attention to it; and I would have these new chairs instituted from time to time as the wants of the community seem to require.

Medical science, which two hundred years ago was imperfect, has, at the present time, acquired a degree of development which renders it impossible that any one should master it in all its details. No intelligent man, devoting his time to it, can read all the works connected with it that appear in the English, German and French languages, from one end of the year to the other. It is a physical impossibility. It is a physical

labor that he could not endure. How, then, is he to become acquainted with the details of all the different branches, able to perform every kind of operation, able to prescribe for every kind of disease? In proportion as the science advances, it will become still more extended and difficult. As each science is perfected, this is the rule. There will be further advances, which, at the present day, it will be unwise, if not impracticable, to define.

I have said that the profession, organized in the manner in which I propose, should be formed of parts not in conflict with each other, but should constitute one harmonious whole. The dentists are capable of exercising a great influence upon society. They are a numerous, enlightened, and I am happy to say, wealthy and influential body of men, and we, with all our prejudices, cannot afford to leave them separate and standing off. [Laughter.] The physicians and surgeons are capable of exercising a great influence in favor of the dentists, and they would, if better informed and more enlightened, exercise a greater influence than they do, by directing their patients always to apply to them for advice with reference to every question which might arise as to the teeth. would be an advantage to the dental profession, and they would get it to a much greater extent if they were a recognized part of the medical profession, as they deserve to be. So with all the other different specialties; and whenever I see a man taking up one of these specialties, and for years together undertaking the labor connected with it, I say, "Go ahead, do what you can in that branch of the profession." I do not regard him as in any degree conflicting with my own or any other branch of the profession; I am happy to see it, and I carry my approval to the extent of recognizing the principle in branches of the profession of which I might have, myself, some little doubts; such branches as the application of electricity to diseases, about which our information is so imperfect and indefinite. I consider that the application of electricity, by an intelligent man, would probably be of great use, and, therefore, when a man undertakes that specialty, I think he enters upon a useful work, and one that it is necessary to make a specialty of before it can be relied upon by the profession generally. It is the same with regard to another class of practitioners—the movement-cure men. That term-" Swedish movement cure "-is an unfortunate name. The method of treatment to which it is applied did not originate in Sweden, but is founded upon the principles of physiology, justified by experience, incapable of being applied by practitioners who have not the necessary knowledge, and promising, in the future, as it shall be developed, the relief of a large class of diseases which have been, heretofore, and which are, at the present time, to a great extent, beyond the reach of surgical treatment.

These, gentlemen, are the essential outlines of the ideas which I wished to present to you. "A word to the wise is sufficient," and therefore I need not dwell upon them. It has given me great pleasure to know that this convention was a successful convention, and that it was attended by a large number of men from various and distant parts of the country. You have already received a welcome from your own profession here; that welcome was only the expression of the feelings of the general community with regard to yourselves and every other body which comes here for purposes so useful and honorable as yours, and therefore, from the harmony of your sessions, I have only to hope that it may be useful, interesting and improving, and if you ever need a place to meet in on another occasion, I would take the opportunity of asking you, on behalf of the medical profession and our citizens, to come back to Chicago. [Loud cheers.]

ARSENIO.

BY H. C. ROCKWELL, D. D. S.

This substance, until lately classed with the metals, is now generally regarded as a metalloid, or non-metallic element. It was known to the ancients, but was demonstrated to us by Brandt, in 1733. It presents, when pure, a crystalline, steel, gray-colored mass, which may be volatilized at about 360° Fahr., and will be known by the strong odor of garlic, which it emits. It is sometimes found native, but generally mixed with the ores of cobalt, and sometimes with those of iron. It may be obtained by roasting the ores, and subliming the oxyd thus obtained in a flask with oil at a low red heat, or by heating in a crucible, with a flux composed of one part nitre, and two of crystals of tartar, having another luted over it to receive the substance, as it becomes deoxydized. It is about five times as heavy as water, and is entirely inert. It forms two compounds with oxygen, both of which are acids, viz: arsenious acid, (As O₂.) and arsenic acid, (As O₅.)

Arsenic acid, composed of one equivalent of arsenic and five of oxygen, is a white substance with a sour metallic taste, and is an active poison. It is of little use in the arts, and is of no importance in dentistry. It may be procured by dissolving one part of arsenious acid in six of concentrated nitric, and evaporating the solution.

Arsenious acid, composed of one part arsenic, and three of oxygen, is, when first obtained, nearly transparent, but, after remaining sometime, becomes opaque, and is generally found as a white powder, with no perceptible smell, and a slightly sweetish taste. This is the common white arsenic of the shops, and is a virulent poison. It acts as a poison, not only when taken into the stomach, but also when applied to the skin or

mucous membrane, or when any of its fumes are inhaled. It is slightly soluble, cold water taking up about 12 parts in 1000, and boiling 70 to 80 in the same. Its specific gravity is about 3.7. It is obtained by roasting the ores of cobalt, and resubliming in closed crucibles, at a red heat. This is always the product when metallic arsenic is heated. It is frequently adulerated with chalk, and other substances. These may be easily detected by heating, as the arsenic will be sublimed, leaving the foreign materials.

There are three liquid tests for arsenious acid, viz: sulphuretted hydrogen gas, nitrate of silver, and nitrate of copper. Impregnate some water with the first, and after acidulating slightly with acetic acid, it will throw down a yellow precipitate, which is commonly known as orpiment, or king's yellow, and is used in painting. With nitrate of silver, by adding a little ammonia, it will also throw down a yellow precipitate, which is the arsenite of silver. With nitrate of copper, also adding some ammonia, it will throw down a bright green precipitate, which is arsenite of copper, or Scheele's green, much used for coloring paper, and as a paint.

Another, known as "Marsh's test," is as follows: take the ordinary apparatus for generating hydrogen gas. By placing a substance supposed to contain arsenious acid in this, and holding a porcelain slab in the flame, if any is present, a deposit of metallic arsenio will be formed. It may also be collected in a glass tube, and oxydized in the flame of a lamp, when the peculiar garlicky odor may be perceived. This may be dissolved and tried by the liquid tests if necessary. Great care must be used to have the zinc and acid perfectly pure, and the flame should be tried by the slab, before the substance to be tested is introduced. Another test is by heating a sheet of copper foil in the liquid suspected, after acidulating with hydrochloric acid. The arsenic will be deposited as a white alloy on the surface of the copper, and may be sublimed and tested.

The antidote to arsenious acid is the hydrated sesquioxyd of iron, and should be administered, after evacuating the stomach, if possible, in doses of a teaspoonful every five minutes, until more than twelve times the amount of arsenic taken is given. This acts by transferring two equivalents of oxygen to the arsenious acid, forming arsenic acid, which unites with the proto-oxyd of iron remaining, and forms an insoluble compound.

The medical properties of arsenious acid are alterative. It has been used in fevers, and is very effectual in obstinate eruptions of the skin. It is officinal as acidium arseniosum, and is given in doses of about one-twentieth of a grain. It is much used in combination with potassa, called "Fowler's solution," officinal as liquor potussa arsenitis. Arsenious acid

has been applied externally to ulcers, &c., and is the "Samson" of the "cancer doctor," by whom it is liberally used. The reason why it does not prove fatal in many cases, is probably because so large a quantity is applied.

The precise manner of its action, when in contact with a part, is a matter of dispute. It acts primarily, by causing its absolute death, probably by over stimulation. It is used in dentistry for destroying the vitality of the dental pulp, and for reducing the sensibility of dentine. If used for the latter purpose it should be with extreme care, and many of our best practitioners entirely exclude it from their practice for that purpose, as they hold that in most cases, death of the pulp will result, sooner or later. It was first recommended for destroying the pulp by Dr. Spooner, of Montreal.

It is sometimes used in the form of powder, but more commonly in a paste with creasote, and sulphate, or acetate of morphia. The formula varies from two parts of arsenious acid and one of morphia, to two parts of the latter, and one of the former. The writer prefers one composed of equal parts of each. It should be applied directly to the exposed nerve, and covered with wax, or cotton saturated with sandarac varnish, and allowed to remain from twelve to thirty-six hours. Some writers assert that it may remain with impunity any length of time, if a proper quantity be used; but it is so extremely difficult to obtain the exact amount, that it is well to be on the safe side, and remove as soon as the desired result is accomplished. From the fortieth to the sixtieth of a grain will probably destroy the pulp, under favorable circumstances. In using, should any escape and cause inflammation of the mucous membrane, it may be treated with nitrate of potassa, with favorable results. It is better, however, to have the paste so thick, that a small portion may be taken on the point of an excavator and placed in direct contact with the nerve; as in this way it is more easy to obtain the quantity desired. The cotton and sandarac should be packed lightly into the cavity, as too great pressure will cause pain. If the nerve is inflamed, it will be better to treat with the morphia alone, for twenty-four or forty-eight hours, and afterwards apply the paste. The paste should be kept in a shallow jar, so that the pledget of cotton may penetrate nearly to the bottom, as, after standing a short time, the different ingredients assume positions corresponding with their specific gravities.

Arsenic, and arsenious acid, form many combinations with other elements, those of the former known as "arseniurets," and those of the latter as "arsenites," none of which are of particular importance to us, as dentists.

THERESA, September 5, 1865.

POPULAR DENTAL EDUCATION.

BY A. LAWRENCE.

Popular education is generally a favorite theme. Descanting philanthropists grow prosy thereon,—the poet sings of the millenium, and all the world says amen for the consummation of any measures requisite to secure so desirable an object: yet, with all the expenditure of pence and pathos, we find very little accomplished beyond the legitimate sphere of the common schools, academies and colleges. This is particularly the case in all attempts to educate the people in specialties.

For more than eighteen hundred years a class of men have labored in the specialty of teaching men the way to eternal salvation, with, it is feared, a somewhat limited success. If, then, matters of such weighty import fail to receive the attention due, in how much less may we expect comparatively insignificant interests to absorb the public mind? The study of the teeth, their diseases and treatment, has from time to time been urged upon the people by some very good men of the dental profession, but the apathy in that direction is too apparent to hope for much progress. One says, write short essays, and publish them in pamphlet form for distribution. Another says, talk instructively to the patient while in the chair—at home, abroad or anywhere; and still another says, publish short articles on dental matters in the newspapers.

The difficulty about the whole is, the people will couple the trumpet, or the pronoun of the first person singular, with all such efforts, even though honestly and unselfishly put forth. My suggestion is, to publish a better practice.

To such teaching a willing people will give full credence, and cheerfully award a liberal salary to the tutor. The indisputable fact is, that the people require unlearning of much they have already learned by bitter experience in regard to practical dentistry. I do not intend to convey the impression that correct dental practice has prejudiced the public mind, but that such dentistry, in the aggregate, as the public have endured for the past thirty or more years, has not been of a character to challenge much respect. Every city, town and hamlet, has its story of broken jaws-of teeth that filling would not benefit; and in some families the same bungling set of teeth continue to be worn by generation after generation, descending as an heir-loom from father to son, and from mother to daughter or granddaughter, fitting all equally well. Apropos to this: I had a request not long since by a lady, to make some very slight alterations in an upper set of teeth, so that they would "stick a little better to her mouth," averring that they were made for her grandmother, and after her death were worn by the mother of the patient with as little apparent inconvenience as the grandmother experienced; but her

own mouth was somehow so peculiar, so unaccommodating, as to not retain the plate so firmly as did a neighbor's, hence the application to me. I am sorry to say I had not the requisite skill to accomplish so much as desired, within the limits the fair patient considered sufficient, and she retired, probably designing to continue wearing the teeth, although half of them were broken, and perhaps eventually leave them as a rich legacy to the next of kin, "their assigns and successors, to have and to hold, as aforesaid, for ever."

I have no comments to make on the case referred to—if others have, lot them.

"Ever let the fancy 10am."

Is there a dentist in the country, of five years experience, who is not occasionally told by some visitor that filling don't do their teeth any good, and that they do not want any of them filled for that reason? Expostulation or explanation are of no avail,—they have "had them filled once by a dentist who was considered good, but the filling all came out, and they will try it no more." Nothing but those "glittering generalities," artificial teeth, will satisfy their desires, and all talking is mercenary and for Buncombe. How have such patients learned that to which they adhere with such pertinacity? The only source from which such astuteness can flow is presided over by the genius of heedless or dishonest quackery, and to unlearn such patients is no easy matter, particularly if, as is generally the case, they utterly refuse to be undeceived by testing a good operation.

I apprehend that, to disabuse the public, by bringing up the standard of operative excellence to anything like general acceptance, will require years yet to come of persistent effort on the part of the high-minded and honorable of the profession.

It is the rank and file of dentists themselves who most need educating, not only in scientific and thorough manipulation, but in their general qualifications, before we can expect that implicit confidence on the part of the public so ardently desired.

Before the establishment of Dental Colleges there was some excuse for that profundity of professional ignorance which was its principal feature, and which, notwithstanding all the light we have, still characterises, to a lamentable degree, the great mass of those engaged in dentistry at the present time. With no less than five Dental Schools in the country, all having able corps of Professors, with other requisites for thorough teaching, no man can reasonably complain of the want of facilities for a professional education, of which neither himself, nor the public for him, need be ashamed, and which, if secured, early or late, will do more to educate the people in all that is essential for them to know about their

teeth, than will be accomplished by publishing popular essays, &c., to the end of time.

I do not particularly object to the publication of essays or newspaper articles on dental subjects, nor to teaching or explaining at the chair, for doubtless some good has thus been accomplished.

The dentist must almost daily give a reason to his patient for that which he does, or proposes to do, not only as a matter of right, but as a means of inspiring confidence in himself, whether his theories are correct or otherwise; and so far as anything is learned by either party in such cases, the custom is a laudable one.

Admitting the premises, where are we to begin, and what is to be done?

Begin by learning ourselves what we recommend to others. Begin by executing a determination to improve our knowledge of principles, of theories and facts, and by striving to excel in operative skill, based upon such principles, theories and facts. I submit that the good work is already begun, as manifested in the high state of excellence to which, in advance of all former anticipations, many dental operators of the present day have arrived.

Theories now outstrip manipulation, and stand as beacon lights in the path of increasing manual dexterity,—formerly art preceded science, and left her handmaid, cunning, to search out a plausible wherefore. What is to be done is a question of more complex solution.

It has been said that doubtful things are very uncertain, but the assertion, logical as it may appear, still lacks confirmation. For instance, it is doubtful whether well informed and regular dentists, as well as physicians, will ever cease to style as *Doctor* the pestilent apes who crowd the purlieus of the profession in both town and city; yet there is no uncertainty that the practice is pernicious, in so far as a kind of endorsement is thereby given, and the public, to some extent, educated to believe that every man calling himself a dentist is one. Outside the Dental Colleges dentists themselves make no distinctions, have no standard of qualifications, and consequently have no right to complain of the public for a want of discrimination superior to our own.

If feasible, I would have provision made by our Dental Schools for the examination, without the lectures, of any man in the profession who has not already graduated, that he may, if found competent, obtain proper testimonials of his fitness to practice, otherwise let him study more, retire from the profession, or be regarded as an empiric. Let it be generally understood by aspirants to our ranks, that nothing short of entire fitness will insure them the least countenance, and they will hesitate before placing themselves in a position to be regarded by the profession and by

the public as acknowledged quacks. Let it be understood further, that no respectable practitioner will have anything to do with foisting an illiterate and reckless villain upon the public as a dentist, and such characters will seek channels of employment more in consonance with their qualifications, and the people will learn to respect and encourage the worthy.

In this way, and in exerting ourselves individually, to further and continued improvement, we shall gradually, but surely, elevate the profession to that point where the exercise of its duties will cease to be regarded as an experiment. In a word, when the dental profession shall come up to the work of self-regeneration, and so teaches, by example, in all that insures public confidence, then will popular dental education have at least begun.

REVIEW OF RESEARCHES ON THE MEDICINAL PROPERTIES AND APPLICATIONS OF NITROUS OXIDE.

The author of the above work, George J. Zeigler, M. D., is well known to the readers of dental and medical literature as the author of neveral well written communications on the above subject. His work, which has recently been published, it would seem, embodies his previous papers, and presents his researches in a more extended manner. While many who peruse the work will be apt to assert that the author is an "enthusiast," and extols too highly the medical properties and applications of protoxide of nitrogen, still we consider it well worthy of careful study by all who make any use of nitrous oxide, and particularly those who are in the habit of exhibiting it to in uce ansesthesia for dental or surgical operations. The chemical constitution, properties and correlations of nitrous oxide are first considered. On the reciprocal relation existing between this agent and atmospheric air he says: " In composition nitrous oxide differs from all other chemical bodies, although identical in constitution in the main with atmospheric air, varying therefrom, however, both in the proportion of its constituent elements, and in the character of their association. Thus, while nitrous oxide contains about one-third of oxygen to two-thirds of nitrogen, atmospheric air has only about one-fifth of the former to four-fifths of the latter. Moreover, in nitrous oxide, the respective elements, nitrogen and oxygen, are in chemical combination with each other; whereas, in atmospheric air, they are in but simple mechanical association, without any apparent chemical union whatever. Nevertheless, though thus differing in the relative proportion and character of association of these constitutional elements, protoxide of nitrogen and atmospheric air are similar in their general properties

and relations, varying more in the degree, perhaps, than in the nature of their affinitive reactions and physiological effects."

The correlation with oxygen is adverted to; the similitude being especially manifested "in the chemical and vital reactions, for, like atmospheric air and oxygen, protoxide of nitrogen is an active supporter of combustion and of life, though in these respects it is in some measure more nearly allied to the latter than the former, from the greater relative proportion of this important element, as well as in consequence, doubtless, of the peculiar combination of its constituents." The physiological influences are next considered, and the opinion is advanced that it exerts an energetic and decidedly stimulant action upon the animal economy, yet, in most cases, being so entirely distinct in its action "from all other excitants as to be quite unique." The effects on the human system claim attention, and he says: "The primary stage of sur-excitation, with its concomitants, ansesthesia and trance, is usually, however, of brief duration, terminating rather suddenly, yet leaving generally a sense of permanent invigoration, similar to that resulting from a free exposure to fresh atmospheric air, not being followed with any reactive languor or depression, so common with ordinary stimulants." The author's experience-which is an extended one-differs considerably from my own limited observations and from others, whose opportunities for testing the after effects of nitrous oxide have been confined to actual demonstration. These assert that a reactive languor or slight depression is rather the rule when anæsthesia is induced, though there are many exceptions, and these exceptions may be seen not unfrequently where sulphuric ether is administered, as we have witnessed in numberless instances. Of the hygienic wees of protoxide of nitrogen he says: "In brief, then, through its constituent elements and dynamic properties, nitrous oxide exerts a powerful influence in both supplying essential matter for organization, and in promoting the general molecular cell, nutrient, reproductive and dynamic operations of the animal, those of the vegetable, animal and psychical life inclusive. It is thus, indeed, remarkably active and potent in promoting the various functions of digestion, absorption, circulation-both general and capillary—eration or arterialization, hamatosis, calorification, assimilation, disintegration, depuration, secretion, excretion, muscular and general contractility, innervation and intellection; and likewise those of the reproductive system. Hence, for the preservation of the healthy integrity of the body, and the regulation as well as invigoration of all the important functions of life, this agent may, cateris paribus, be always employed with advantage."

Of its value as a therapeutic agent he remarks: "Its practical application, for the removal as well as the prevention of disease, are numerous

and diversified. In fact, in these respects, the protoxide of nitrogen is not surpassed, if equalled, by any known sanitive agent outside of those included in the materia alimentaria." "Nitrous oxide is thus unique in its physiological and sanitive influences as well as in its chemical constitution and properties; for, though analogous in the extent and variety of its therapeutic uses to some of the most active medicinal substances, such as iron, quassia, strychnia, quinia, mercury, etc., it is far superior to them in the greater range and diversity of remedial application, as well as in the general character and special peculiarities of its effects upon the animal organism. Indeed, from my present knowledge upon the subject, I am convinced that protoxide of nitrogen will supersede, to a considerable extent, some of our most reliable and popular remedies, while at the same time it will render the prevention and resolution of many of the ordinary forms of disease more certain, speedy and decided; and, moreover, afford the means of removing some of those peculiar abnormities now not at all, or but slightly amenable to the present therapeutic measures." The author continues on the subject of the medicinal properties and applications of protoxide of nitrogen, and presents his views as to the usefulness and indications for the administration of nitrous oxide in some forty-five different pathological conditions incident to the human economy. Nitrous oxide, as an anæsthetic, claims from the author considerable attention, and while he directs attention to its appropriate uses. he does not neglect to show the general characters of the dangers to be apprehended from the undue or injudicious administration of nitrous oxide. Thus, "the free or inappropriate use may produce both primary and secondary irritation, congestion, serous or hæmorrhagic effusion, and inflammation in different parts of the body, and especially in the brain and kidneys,"-or, "by overstimulation or superoxidation, cause excessive disintegration and undue waste, as well as abnormal excitement of the system, even to destructive softening of the brain, nervous tissue and other important structures. Furthermore, by unduly accelerating functional action it may give rise to rupture of the heart and bloodvessels, or disruption and other mechanical derangements of important parts of the organism. Moreover, through its powerful aphrodisiac effects, it may intensify sexual desire to such a degree as to cause unpleasant exposure or even serious trouble. It is probable, also, that dangerous intoxication might sometimes ensue from the chemical reactions of the elements of protoxide of nitrogen with those of the body, and the consequent formation in excess of such compounds as carbonic acid, cyanogen, ammonia, urea and other substances of the kind." The preparation and combinations, modes of administration and dose of nitrous oxide, are considered at length, and we close this review with this expression of our judgment, that while the

author has presented many views that are new, and some has urged claims for nitrous oxide which time and experience may decide it is not entitled to, yet these views are worthy of consideration, and all who are interested in this subject should possess this little work. It is published by Messrs. J. B. Lippincott & Co., Philadelphia, which is equivalent to stating that the general typography of the work is excellent. G. T. B.

OAUSES WHICH HASTEN OR RETARD VULCANIZATION. BY GEO. E. HAYES.

In an article entitled "Temperature and Pressure in Vulcanizing," by A. Lawrence, in the July number of the Times, after alluding to experiments with an imperfect thermometer, the following sentence occurs: "I make no comments here, further than to suggest that some of our shorttime friends have probably got just such a thermometer, and can, of course, save time at the risk of charred work and of having their heads blown off." In this sentence the doctor assumes, that temperature and pressure of the steam within the vulcanizer, are the sole causes of hastening or retarding the process. This I regard as an error. When I first commenced vulcanizing, it was with just such an instrument as he uses, one of Warren's, the size of a small bee-hive. The time required was two and one-half hours at 320°. There was leakage at all the joints; and the machine had so formidable and dangerous an appearance, that it led. finally, to the construction of an oven; the object then being mainly to reduce the size, in order to secure greater safety with the same thickness of metal. Its capacity was barely sufficient to contain one flask. I mention this, because the history of this little instrument will throw light on the question at issue. In experiments with this machine, the thermometer was known to be correct. At the first trial it was kept at 320° two hours. The rubber came out nearly charred. It was tried again at 320°, one and a half hours; still very dark. Then one hour; too dark yet. Then forty minutes; this seemed about right. The rubber was hard, lightcolored, tough and elastic. My surprise was great at such a result, and I at first supposed it due to the diminutive size of the machine. In this I was undeceived in the following manner: The mechanic who made the oven suggested that he could get up a better looking machine, at less expense. He accordingly made arrangements to cast them in brass. The first one finished was put to the test, heat up to 320°, and kept there forty minutes, the same thermometer being used as before. The rubber came out perfectly soft. Tried again with no better result. Next time kept it heated up one and a half hours; had just begun to harden. This was a new mystery. The thermometer was examined and found all right.

I could not give it up. The next night it was again heated up, and, while seeing if the joints were perfect, a tool was accidentally laid upon the surface of the turned brass and was instantly bedewed with moisture. On examination it was found that steam was escaping from the whole surface, and while it did not prevent the temperature from rising to 320°, it did, undoubtedly, and effectually, prevent that degree of heat penetrating to the centre of the flask. It revealed the fact that a vulcanizer, to be reliable, and uniform in its results, must be absolutely steam-tight. will show the doctor why his "brother, in Philadelphia, finds it necessary to vulcanize at 335° to 340°, while the same thing is done in some other, or even the same place, at 300° to 320°, and in about half the time," without involving "a lack of uniformity in the graduation of our thermometers," either with or without design. From that moment all my experiments were directed towards cutting off every chance for leakage. The safety valve was discarded. The thermometer, which, up to this time, had been placed within the steam chamber, was adjusted outside, so as to receive the heat from a mercury bath, situated upon or within the substance of the cover, thus confining all chance for escape of steam to the packing joint. When this joint was secure the rubber always came out hard. When escape of steam could be detected, it was invariably found soft, unless subjected to heat a much longer time. On one occasion a screw joint, similar to the Whitney machine, was tried, and forced together with a wrench 18 inches long. The joint was not sufficiently tight to vulcanize in forty minutes. The wrench was then lengthened to three feet, and the whole power of a man was exerted. Vulcanization then took place in that time, but, on opening the machine, the packing was torn to shreds. The plan finally adopted, enabled these machines to vulcanize in much less than half the time required with the Warren and Bank's machines, at the same temperature, and under the same pressure per square inch. Instead of forty minutes at 320°, as I then supposed was requisite, I now find that from fifteen to twenty minutes exposure to a heat of 320° is quite sufficient, providing the heat has been raised not faster than 8° or 4° a minute, and this with such perfect uniformity, that every piece may be obtained of precisely the same quality. This cannot be done with any machine which leaks steam, sometimes more, sometimes less, as the time required, other things being equal, depends on the amount of leakage. Some have supposed that the thermometer not entering the steam chamber made a difference, and that the heat inside was really greater than indicated. This objection was raised by the examiner, when a patent was pending, and was referred by him to Prof. Hadley, of this city, who, after a patient examination, submitted the following certificate:

[&]quot;I have compared the indications of two thermometers in the Vulcanizing

vessel invented by Geo. E. Hayes, one having its bulb in the steam chamber, and the other having its bulb immersed in a small cavity filled with mercury made in the wall of the vessel. On heating up the vulcanizing vessel with the plaster mould inside, the two thermometers rose together, attained the same height, (325° F...) and fell together, with a correspondence very exact, and at no time during the whole experiment did the variation exceed one or two degrees Fahr." The trial was repeated with precisely the same result. The thermometers were first verified by immersing their bulbs in the same vessel of mercury, and heating to above 320° F. They were found to correspond exactly.

BUFFALO, N. Y., January 11, 1861.

GEORGE HADLEY.

One other advantage was gained by this adjustment, which had not then been thought of, and which has a direct bearing on the subject discussed in the article above referred to. It had been found that a glass thermometer, exposed to the pressure of steam, was not very trustworthy, but why it was not so, does not appear to have elicited much inquiry. My attention was called to this subject by the great quantity of tubes called for to replace defective ones when used within the steam chamber, as compared with those wanted for a like purpose in machines where the bulb was not exposed to pressure. On examining such tubes, it was found invariably that the glass bulb was checked into numerous fragments, like a piece of mosaic, each one retaining its place, and securing a certain amount of play to the mercurial column, but ready at any moment to fall to pieces on the slightest concussion, and, doubtless, becoming more and more incorrect every time the instrument is subjected to pressure. This could hardly be otherwise. The wonder is that this thin bulb of glass can withstand a crushing pressure of 80 pounds to the square inch, even for a single heat. The tubes used in the mercurial chamber present no such appearance. They are subject to breakage from concussion, or other external violence, but while the column remains intact, their indications may be relied on with as much certainty as when used for any other purpose. There is no gradual deterioration. If an accident happens, it shows itself at once, even to an inexperienced eye, and the deutist is not beguiled into placing reliance on a faithless monitor. vulcanizing, the object is to ascertain the precise amount of heat. The steam gauge will do this by showing the amount of pressure inside of the vessel. The thermometer shows it directly, by measuring the expansion of mercury within the tube. That is best which is most simple, and in which an error is most easily detected. With the gauge, all depends upon the nice adjustment of springs by mechanical means. these springs, and this machinery, be subject to deterioration from heat and frost, from pressure and relaxation, from rust and corrosion, and from other effects of use and time, and who shall tell us when such deterioration has taken place? Must we call in the inspector annually or oftener, to solve our doubts? If I mistake not, this is deemed necessary, and

even required by law in some places, for those who use the gauge in connection with the steam engine. Very likely the gauge, under certain circumstances, may prove the preferable instrument of the two, but before raising a prejudice against an instrument in so general use as the thermometer, it seemed to me no more then even justice, first to point out the causes which have led to failure, and then the proper mode of using it in connection with the vulcanizer.

DISEASES OF THE MAXILLARY SINUS.

BY GEO. T. BARKER, D. D. S.

(CONTINUED FROM PAGE 14, VOL. 111.)

Ulceration of the lining membrane of the maxillary sinus is occasionally met with, but is not of so frequent occurrence as the other conditions previously adverted to in former communications. Most pathologists treat of it as merely a symptom of some other morbid condition, but, nevertheless, it seems to me appropriate that it should receive special mention, particularly as it may result from a simple mechanical injury, local irritation from dead or diseased teeth, or roots, the resulting inflammation having passed on to the ulcerative stage. In all instances of this affection, there is first a modification of the normal secretion of the cavity, followed by the formation of an ulcer or ulcers on the floor of the sinus. These extend, sometimes coalesce, until, occasionally, the whole lining membrane is affected, besides, in many instances, passing outwards and affecting the mucous membrane of neighboring structures. When treating of the inflammation of the sinus in a former communication, I stated that persons of scrofulous or syphilitic habit were more prone to affections of this nature, in consequence of the depraved condition of the blood, nutrition being imperfectly performed; the same remark may be appropriately made of the condition under consideration, indeed, it depends for its development upon the depraved habit of the affected person. Ulceration of the lining membrane may commence in several distinct waysfirst, there may be such a degree of active inflammation in the part as to cause molecular death; secondly, inflammation of a chronic character may give rise to ulcerative inflammation by modifying the nutritive actions, the healthy balance between composition and decomposition not being maintained; or, as seen particularly in specific cases, the ulceration being preceded by certain morbid growths, which inflame, disintegrate—consequent lesion of substance occurring. There are several varieties of ulcer met with; the simple, fungous, scorbutic, venereal, cancerous, scrofulous, phagadenic, &c. The symptoms of this abnormal condition do not differ very considerably from those of inflammation of the sinus, treated of in a former arlicle. There is present a dull and continuous pain, sense of

weight and heat, an escape of a fluid into the nostrils or mouth through the nasal opening, or it may be through an artificial or fistulous cavity. This fluid is of greater consistency than that seen in inflammation of the sinus, which is due to the disintegration and ejectment of the disorganized tissue or its constituents, the "slough," as it is termed, being united with the abnormal secretion of the lining membrane. It is also exceedingly feetid, and highly irritative, which is very annoying to the patient. In the malignant forms of ulcerative inflammation of this cavity, the discharge is of a dirty yellowish green, or brownish color, or is mixed, more or less, with blood and pus. It is whitish yellow in the simple ulcerations. In consequence of the presence of this disintegrated tissue, or flocculi, in the secretion, the natural opening into the naries is apt to become closed, the fluid would then, by its presence, act upon the bony wall, increase the pain and discomfort, and eventually, if not evacuated artificially, would cause absorption and disintegration, until it effected an escape through the walls of the sinus. If ulceration continues for a length of time, caries, or necrosis of the osseous walls, will ensue, the teeth will become loose in their sockets, preceded by absorption of the alveolar process, accompanied by inflammation and ulceration of the gum tissue and surrounding soft parts. As the disease advances, there is a tendency to asthenic and irritative fever, which subsides in many cases only upon the dissolution of the sufferer. As previously remarked, one of the best diagnostic signs of this condition, is the depraved state of health of the affected person, for while, undoubtedly, a necrosed root or fung may induce ulceration of the sinus, it would not be likely so to do unless there was a strong predisposition to a low degree of inflammation.

Another, and one most frequently met with in those inflammations that are known as specific, as scrofulas, or syphilis, is a peculiar cadaverous expression of countenance, and more or less induration of lymphatic glands in the neighborhood; but as I shall refer to these abnormal conditions more particularly when treating of morbid growths in this cavity, I will proceed to direct attention to the appropriate treatment of ulceration of the lining membrane.

As in all conditions of the sinus, where a fluid is inclosed having no outlet, the first indication is to evacuate the contents and thoroughly cleanse the cavity, at first with tepid water, a small quantity of table salt being added to overcome the fœtid condition of the discharge. The next is to search for local irritants, as dead or diseased teeth or roots, remove them without delay, and until an examination, thorough in its character, has been made, no treatment should be attempted. Appropriate stimulant injections for the lining membrane should now be used, and these may be either of the vegetable or mineral astringents. I have found

tannic acid, diluted with water, two or three grains of the former to an ounce of the latter, to be efficient. Dilute solutions of acetate of lead and sulphate of zinc are also useful. Harris remarks, "if the ulcer is of an irritable nature, warm injections, thrown into the antrum by means of a properly constructed syringe, of decoction of poppy heads, chamomile flowers, or the leaves of hemlock, will often prove beneficial in soothing the pain. Tincture of myrrh diluted, or a decoction of walnut leaves, may be advantageously employed as injections in cases of indolent ulcers." My attention, some years since, was directed by Prof. E. Parrish, of the Philadelphia College of Pharmacy, to the peculiar healing influence of honey on the mucous membrane; acting upon the suggestion, I have used, with marked success, strained honey diluted, in all cases of inflammation and ulceration of mucous surfaces. In a case of ulceration of the lining membrane, which was under treatment, it was very beneficial, but, unfortunately, the person was of a scrofulous diathesis, and the disease had existed for a considerable length of time and could not be entirely eradicated. General treatment will also be necessary; if the person is debilitated, the mineral or vegetable tonics, as the preparations of iron, or arsenie, or quinine will be demanded. The diet must be regulated, and should be of the most nutritious character, and every effort should be made to improve the quality and quantity of the blood; once having succeeded in accomplishing this, ulceration of the lining membrane is readily overcome, as the granulations, which heretofore were thrown out, became partially organized, and were subsequently disintegrated and ejected, now will become organized by the elimination of healthy granulations, and perfect cicatrization will ensue.

[TO BE CONTINUED.]

Mr. Editor:—An important, critical, and in some respects remarkable, case came into my hands a few days ago. Thinking the circumstances attending it might prove interesting, and, very probably, advantageous to some of our recent graduates, I take pleasure in communicating them.

In December last, a gentleman of this city, Mr. Robt. Walmsley, about thirty-five (35) years of age, called to ascertain the cause of pain and swelling at the angle of the jaw. Upon examination with an instrument, for it was invisible, I found a dens sapientize lying prone upon the gum, covered by the integuments in that region, the masticating surface squarely against the second molar. I presume the tooth had, by this time, attained its full size, as some slight cutting of the gum and surrounding tissue afforded relief, and it thus continued until a short time back, when it again became irritating, which, together with the annoyance from decomposition of deposits under the tissues overlying the tooth, induced him to have it removed. Last Wednesday evening, the 20th inst., he came to me for

that purpose; the only part of the tooth yet visible was the lateral portion of a cusp, in extent about a square line, (an exact illustration of the case may be seen in "Tomes' Dental Surgery," page 235, figure 75.) I slowly and carefully secured a proper hold of the tooth with ordinary lower wisdom forceps, after finding the crown too much depressed to use the "physio" forceps; a few movements sufficed to loosen the tooth. comes the difficulty and singularity of the case; it was like a kernel in a eracked nut, which, although loose, will not come out without a further breaking of one or the other; of course I determined to avoid sacrificing the second molar, if possible. Three fangs of the tooth were converged and united in a round smooth surface, which would move in the socket as the crown would be raised to clear the molar, while the fourth fang was prolonged one-fourth of an inch, curved and projecting through the alveolus towards the ramus. The first movement to elevate the crown sent this prolonged fang against the inferior dental nerve, probably about where it enters the canal, resulting in complete temporary paralysis of that side of the lower jaw, an insensibility and apparent absence of all the inferior teeth on that side, just up to the mesial line, and in the cheek and chin just to the symphysis, one half the tongue was also almost insensible. The shock was excessive, and the pain, although momentary, was excruciating; ten or fifteen minutes would elapse before any sensibility would return to the benumbed parts. Twice this occurred. The muscular force employed was exceedingly small, being very slow and careful in my manipulations, but the instant the crown of the tooth was lifted to a certain point the shock would be felt, which he said was as though a tremendous blow from a club had been dealt him on the jaw. The third time I removed it, using a little more, and sudden force; same effect on the nerve. Only partial sensibility has yet returned to the paralysed parts, and in the chin and right side of lower lip, where the nerve filaments are most numerous and terminate, total insensibility still exists; his condition, however, is daily improving.

I will now speak of the danger which attended this operation. Before the patient left my office, the bleeding, which was in amount about equal to an ordinary case of single extraction, had entirely ceased. At 10 P. M., I was sent for. I found him bleeding considerably and a good deal of pain at the angle of the jaw; applied a strong solution of tannie acid without any effect, then sol. per sulph. iron with a like result, the bleeding increasing to profuse hemorrhage. The blood was not in a depraved condition, but good rich blood, coagulating readily and freely. I then applied sulph. copper and compress, at which time, 12 o'clock, the patient had lost nearly four pints of blood, from which loss he now fainted. The copper somewhat checked the flow, but not satisfactorily; in his critical

state I was afraid to rely upon it. I then introduced a stick of nitrate of silver, thoroughly cauterizing the bottom and sides of the socket. This stopped the flow almost instantly. The patient was now returned to consciousness, very weak, but not too prostrated to rally and recover; twenty-four hours after he was able to get up, and to-day he is about, gradually, but surely, approaching recovery. Had the bleeding continued one hour longer, he, to-day, would have been a dead man. Occidental.

BROOKLYN, September 24, 1865.

ON THE UNIFORMITY OF DENTAL FEES.

BY J. Q. B.

It is about time that some action, and that final, was taken by the Dental Profession in regard to their remunerative fees for services rendered the public. Much valuable time has been expended in arguing and debating different subjects appertaining to the advancement of dentistry, but the main feature of all, remuneration, seems to have been overlooked, and a regulation, or system of prices, forgotten. All dentists are aware of the many difficulties attending that portion of our practice, in fact, not knowing, in many cases, what to charge for our labor. There being such a multiplicity of fees for every particular in the business, and every dentist charging that which he thinks a remuneration for his services, some valuing at an exorbitant figure, others more moderate, and some placing no valuation whatever upon them. By such proceedings, the public may well exclaim, "that dentistry has no conscience," being entirely governed by the station in life, or circumstances of their patients, and thereby regulating their fees accordingly. The Medical Faculty have for years been governed by a schedule, or regulation of prices, consequently all doctors agreed, at least on one subject, and why not the Dental Profession? I merely wish to call the attention of the dentists to this fact, and see if by some means it cannot be obviated. Time will not permit me to enter into the many annoyances to which the dentist is daily called upon to bear, and space cannot be afforded for the experience and trials, to which we can all testify, for the want of some uniformity in dental fees.

Now, our Dental Colleges have done much towards elevating the profession, and as dentistry is recognized as a science, let us have, through the colleges, a standard list of dental fees, a copy of which to be placed in a conspicuous position in every dentist's office, so that the public may have an opportunity of seeing, and knowing, that there is an uniformity of prices. Those that see fit may follow them, or charge exorbitant prices, moderate or nothing, as their fancy dictates. But the public will be the gainer, and thereby learn to discriminate, and relieve the dentists of so much unnecessary trouble and anxiety.

SENSIBILITY OF DENTINE.

BY JAMES TRUMAN, D. D. S.

(Read before the Pennsylvania Association of Dental Surgeous.)

Dentine, regarded as a whole, may be considered as a mass of tubes, laid with a certain degree of regularity in juxtaposition. They have distinct parieties, and are, in a certain sense, independent of the surrounding intercellular tissue. They possess but one open extremity in connection with the pulp. The peripheral ends are lost at the junction of cement and dentine, or pass over and disappear in the former tissue. In the coronal portion numerous branches are distributed at the enamel, or they pass over into the latter tissue and either become too minute for observation, or terminate abruptly with an enlarged diameter. It is at this part of the tooth that extreme sensibility exists. It was very early discovered in operations upon the teeth, that in making excavations upon the broken down tissue of carious teeth, that the pain was most acute at this point. Theorizing upon this fact, many entertained the idea that these tubes must of necessity contain a nervous structure, but the evidence to support the theory was wanting. Not until recent years has any attempt been made to demonstrate the cause of this sensibility, or, if made, was unproductive of results.

But little difficulty has existed in determining the character of dentinal tubules, as far as their general form is concerned, nor has it been difficult to demonstrate their tubular structure and that they are filled for the conveyance of nutrient fluid to all parts of the tooth; but, as examinations have generally been made upon dried specimens, it has not been possible to determine whether or not these tubes were traversed by a nerve tissue. That they contained matter, of greater density than fluid, has long been considered settled, but of what that consisted the best authorities were unable to determine.

Owen,* writing in 1845, says: "that some elementary prolongations of nerve may be continued into these tubes, who may confidently deny?"

In the experiments instituted by Tomes, of feeding a young pig on madder, the coloring material extended only to the inner tubular tissue. The parieties of the tube, nor the inter-tubular tissue, were not affected. This fact has more recently been taken advantage of by another observer,† to exhibit soft tissues and germinal matter, as he terms it, that may exist in bone or tooth substance. He uses, for this purpose, carmine dissolved in ammonia. This will color all these tissues a deep red, the balance of the tooth retaining its natural color. In sections that I have thus prepared, allowing them to remain several hours in the carmine solution, and then regrinding them with scotch stone until the required thinness for

examination was reached, exhibit, very beautifully, the color through the tubules; but, as in the case of the madder experiment, confined entirely to the inner tubular tissue. Reasoning from this fact, we may conclude, that inasmuch as the coloring matter takes effect only upon the soft tissue, that the tubules must be permeated by a tissue to some extent resembling it in structure.

Kölliker,* up to 1860, believed the tubules were permeated by fluids solely, and writes upon the sensibility of dentine after this style: "the tactile sensibility of the teeth is also tolerably fine, especially upon the masticating surface, where minute foreign bodies, as hairs, or grains of sand, are distinguishable, where the masticating surfaces are rubbed upon one another, and its intensity is very great in disease, which is sufficiently explained by the large supply of nerves in the pulp, and the facility with which they may become pressed within their hard enclosure. This distinguished observer fails to notice the labors of Dr. Tomes in this direction, although the work, from which the above was quoted, was published sometime subsequent to the announcement of the discovery of the dentinal fabrils by that gentleman.

Although so long a time has elapsed since the discovery was announced that each tube was occupied by a fibril and followed its course, but few histologists have been found willing to recognize their existence. I am at a loss to explain this, in a matter so simple, and one requiring so little skill to elucidate. It may possibly have arisen from want of care in preparing sections to represent them, and also that they are not readily demonstrated in dry teeth. Dr. Beale, in a recent work on the tissues, fully endorses their existence as a fact, and this, from one so eminent in histological matters, should set to rest the number of second hand observers who have denied their existence. Much of my time, during the past year, has been devoted to examinations in this particular direction, and, from want of knowledge of the proper mode of manipulating the sections, suffered, in my earlier efforts, a full share of disappointment. In a partially decalcified section of a human tooth, afterwards fractured in a direction transverse to the course of the tubules, these fibres were seen protruding in large quantities, resembling the undergrowth of a forest. In an entirely decalcified section of a partially developed tooth of a lamb, a series of isolated tubes were seen, much broken up, and from these the fibrils could be beautifully observed passing from section to section of the fractured tubes. These fibrils present a tubular aspect, and, very probably, are of that character, and serve for the transmission of fluids for the nutrition of the tooth and of sensation; but, of this, I have not been able to satisfy myself. They appear to be nearly structureless in char-

[#]Human Microscopic Anatomy, p. 309.

acter. These fibrils cannot be confounded with the tubes, for their appearance is very dissimilar. This must be apparent to any one in an examination of a section in which the tubes have been isolated by decalcification: neither are they shreds of fibrin, as has been supposed to have been proved by a distinguished member of our profession,* but are, in my judgment, simply what Dr. Tomes asserts them to be, nerve fibres, to whose presence in the dentine we owe all the sensibility, both in the cavity of decay and the power to localize touch upon the masticating surfaces of teeth. I do not wish to be understood as denying the possibility of impressions being conveyed to the pulp by vibrations in the fluid that may be contained in the tubules. Such, undoubtedly, would be the result. but that this is the primary cause I do deny. It appears to me that this theory, supported though it be by Kölliker, Robin, Magitot, and others, is wholly irreconcilable with the fact that sensation is experienced at the point of contact with the instrument in cutting on the foreign substance in mastication, and that the greatest amount of sensation is experienced at the junction of enamel and dentine. If the fluid is the conductor, the pain must be felt at a point somewhere in the interior of the tooth. But we all know this is never the case. That the dentinal tubes are solely occupied by fluid I do not consider to have been proved, and, until this is accomplished, it seems to me a waste of time to attribute results to causes. the existence and functions of which is involved in so much obscurity. and, with my present means of observation, must regard all such theories as fallacious. An objection has been urged against the claim of Dr. Tomes, that these fibrils are larger than the tubules from which they appear to emanate. This is only true in exceptional cases, and may be caused by flattening upon the slide. In a large number that I have examined, I have not found them of greater diameter than the inner diameter of the tubes. Another objection has been urged with some apparent force, that sensation is reduced as the diseased portion of the tooth is removed. The tendency of all such tissue, when cut, is to retract. would withdraw the terminal excised portion of the fibril beyond the reach of the instrument, and enable the operation to proceed without pain. Again, in many cases, excavation may be carried on without suffering to the patient. Without doubt, when this is the case, calcification of the fibril has taken place.

For the information of those desirous of making examinations, it may be well to repeat Dr. Tomes' mode of preparing sections, which I have found the best to bring these fibrils in view. First reduce the tooth sufficiently thin for examination; allow it to remain in hydrochloric acid, much

^{*}Dr. McQuillen. Report of American Dental Association.

diluted, until all the earthy matter has been dissolved; wash the section, and lay it on a glass slide, well cleansed for the purpose. Then, while one part is held, tear the section in a direction transverse to the course of tubules, and endeavor to accomplish this without any movement of the portion attached to the slide; cover the section with the thin glass used to cover microscopic preparations, giving it slight pressure. This cover is important, as it serves to bring into view all parts of the torn edge. In my earlier attempts I am satisfied I failed, in many instances, by making examinations without it, thus throwing out of focus many of the fibrils. The tooth selected must be one recently extracted. It is, however, not necessary to decalcify a section to see the fibrils. They may be observed, if care is exercised in fracturing a section, without it; but they will necessarily be short, as in the specimen of my preparation first mentioned.

My observations upon the sensibility of dentine may be summed up briefly thus:

First. That sensitiveness in dentine bears all the characteristics of nervous sensibility in other parts of the system, and is evidently produced by the same cause.

Second. That nerve fibrils ramify through the dentinal tubes, and exhibit their greatest sensibility at their terminal filaments.

Third. That these nerve fibrils convey the sensations to the brain with equal fidelity, though not so acute, in teeth of normal condition, as when diseased.

We publish, in this number, the excellent address of Prof. Brainard, on "Specialities and Specialists in Medicine." It was our intention, at first, to make a synopsis of it, but when we read it over carefully, we found to curtail it in any way would only injure it; so we have published it in full, to the exclusion of other matter that has been lying over for several numbers. We commend the address to the careful attention of the readers of the Dental Times. It not only shows that the medical profession must soon be divided into several branches—but the doctor also recognizes dentistry as one of them. The dental profession has always claimed to be a branch of the medical, but this is the first time they have extended the hand of fellowship to us. We hope the time is not far off when we will be recognized, not only in the Northwest, but throughout the world.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE TENTH ANNUAL SESSION. 1865-'66.



TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., ELLESLIE WALLACE, M. D., BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S.,

S. DILLINGHAM, D. D. S., G. R. MOREHOUSE, M. D., THOMAS WOOD, CHARLES HAMILTON, SEC'Y.

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EMERITUS PROFESSOR OF OPERATIVE DENTISTRY.

T. L. BUCKINGHAM, D. D. S.,

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PROFESSOR OF MECHANICAL DENTISTRY.

G. T. BARKER, D. D. S.,

PROFESSOR OF PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

W. S. FORBES, M. D., D. D. S., PROFESSOR OF ANATOMY AND PHYSIOLOGY.

JAMES TRUMAN, D. D. S.,
PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S., DEMONSTRATOR OF OPERATIVE DENTISTRY.

J. M. BARSTOW,

DEMONSTRATOR OF MECHANICAL DENTISTRY.

The Lectures to the Regular Course will commence on the lst of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course, (Demonstrators' Ticket included,) - \$100

Matriculation, (paid but once,) - - - 5

Diploma Fee, - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Tenth Annual Session, 1865-'66,

The tenth annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed a the College are entirely gratuitous, a superabundance of patients invarably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

COURSE OF LECTURES.

CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can be performed before the class.

DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration. At the Clinic the incumbent of this chair will also demonstrate before the class the various operations described in his course of lectures.

MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

PRINCIPLES OF DENTAL SURGERY AND THERAPEUTIOS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, microscopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissectingroom in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

REGULATIONS.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this Coffege: five years' practice, inclusive of the term of pupilage, will also be considered equivalent to the first course of lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or proctice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them. shall receive the degree of Doctor of Dental Surgery.

TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

DENTAL TIMES.

VOL. III.

PHILADELPHIA, JANUARY, 1866.

No. 3.

REMARKS ON DR. LAWRENCE'S SUGGESTIONS, OCTOBER NUMBER DENTAL TIMES.

BY T. D. THOMPSON, D. D. S.

"If feasible, I would have provision made by our dental schools for the examination, without the lectures, of any man in the profession, who has not already graduated, that he may, if found competent, obtain proper testimonials of his fitness to practice."

The above quotation I find in the October number of the DENTAL TIMES, by Dr. Lawrence.

Mr. Editor, I would endorse this suggestion of Dr. Lawrence as being very proper and just. I believe that there are many members of the dental profession who have not received proper testimonials as to fitness, who would, were they subjected to a proper examination, be found worthy of such testimonials, and were they conferred upon them, honor them in every particular, and thereby greatly assist the true interest of the profession.

I have lost heart often on looking around and noticing the growth and out-croppings of dental quackery and empiricism. I have, in noticing the reckless, confidential manner of the "natural" and the three months' manufactured dentist, often felt that the profession was drifting back to primitive times, to charlatans and barber tooth-drawers.

I have of late, however, taken a more hopeful view of the situation of affairs. It appears to me, as a reader of the discussions by the members of the various Dental Associations, that the minds and feelings of dentists are being directed in a right course for the true advancement of our cause. The out-spoken minds at the Dental Conventions, and the subjects and character of these debates, have cheered me much, and given me a more hopeful feeling. As a member of the dental profession, nothing would afford me greater satisfaction than to witness its elevation and consequent usefulness.

I have come to believe, from an observation and experience of twenty years, that the right practice of dentistry is of very great importance to

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every community. I know that upon the condition of the teeth is based much, very much, of good or bad health, and am of the opinion of Prof. Brainard, of Chicago, that the right practice of dentistry is an important part or division of the practice of medicine, and that physicians, consulting with properly instructed dentists, would often find it to be of great importance to all interested.

I trust that the suggestions of Dr. Lawrence will find a hearty response among the members of the dental profession, and that it will stimulate many worthy members to make strong efforts for those "proper testimonials."

If my memory serves me, there is, or was, such a provision of the Baltimore College of Dental Surgery. I would suggest, if we are to have a provision of this nature, that it be carefully carried out in a faithful and thorough manner, so that graduates may not have just cause for complaint, and it be not used for mercenary purposes.

INTRODUCTORY TO THE COURSE OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

Delivered at the Pennsylvania College of Dental Surgery, November 8th, 1866.

BY JAMES TRUMAN, D. D. S. (Published by request of the Class.)

Gentlemen:—Before entering upon the regular course of subjects, that it will be my pleasure to lay before you, it seems to me important that I should take a cursory view of the duties you will be expected to perform, as far as this chair is concerned. It will embrace the course which it will be best for you, who are just entering upon your studies, to pursue in the clinic, that the highest success may be attained, and the duties that I owe to you, as your teacher, and a general survey of those subjects to which I expect to call your attention.

To begin right, is of primary importance at the outset of life's career. To plan for the future and plan correctly is equally important, though that future may never be yours to enjoy. It is expected, when a student matriculates in this college or any other, that he does so, feeling that having something to learn, he can accomplish that desirable object better here than elsewhere. Hence, I would impress upon you the necessity, on entering these walls, to lay aside all former prejudices that may have been instilled into the mind, and come with a clear feeling that you know nothing. This I hold to be essential in all branches of learning, but it is especially true in our profession. Many, perhaps most of you, have been taught, more or less, of the primary principles of dental science, under your preceptors. This is well, but it is apt to prejudice the mind in favor of certain modes of procedure, and the student, if perchance he finds

different ones adopted, mentally resolves that he knows a better way, and feels an unwillingness to accept or even try the new. What is the consequence? Time is short, and, perhaps, when the session is half over, he becomes convinced of his error, but too late to reap the full advantage of the knowledge. This, gentlemen, is no fancy sketch, but true to observations made whilst in charge of the clinic of this institution. So much have I been impressed with this fact, that had I no other reason, I should have felt it my duty to preface my introductory lecture with this warning.

In no profession is the bigot more out of place than in ours. I, as well as you, must keep our minds ever open to the reception of new truths, or we some to a stand; and to stand is virtually to recede. It has been my observation, that those who have come here, dropping all pretensions to knowledge, even though they may have had years of private practice, and have entered with all the earnestness of first course students, have graduated covered with honor. Whilst on the other hand, I have seen those having had, perhaps, more advantage in previous practice, who knew everything, and could be taught nothing, only escaped being sent away disgraced. This not from any prejudice on the part of their teachers, but simply from the fact that knowledge is always humble, ignorance pretentious.

Hence, I would say, let your minds be blank, and, if in the future, the principles and practice we teach may not correspond with your more matured judgment and experience, adopt others. You will, at least, have had the benefit of the labor of those who have devoted their time and talents to the elucidation of what they conceive to be correct principles. By contrasting the teachings of different minds, you are better able to do your own thinking, and still further carry on the progressive development of new ideas.

We are all learners, gentlemen, and although I am here behind this desk in the capacity of teacher, I am but as a student with you, traveling forward, and aspiring to greater knowledge and perfection in that which has been adopted. We may be compared to many travelers over the same road, some have yet to accomplish their first mile, others have traveled many; but, while all are earnestly pressing forward for the same goal, none have or ever will reach the end—perfection.

Hence all pretensions to superiority, are to my mind, out of place. I claim none for myself, save in that which comes from enlarged opportunities and experience. If the unceasing changes which time evolves, have thrown me in the advance, it is a duty I at least owe to those who may require the knowledge, to point out the way that has been taken. But it still remains with you a free choice, whether you will follow or not.

There is no such thing, gentlemen, as genius as it is generally under-

stood. When some noted man steps out from behind the curtain of life and makes his mark upon his generation, the world excuses its short-comings, by loudly proclaiming him a genius. I grant that to become great requires peculiar qualities that form a basis for success, but no man ever acquired distinction in any branch of science or art, who had not been a hard worker in secret. Providence grants no honorary degrees. To be entirely successful, one must have some natural ability, but, if that was to be the beginning and the end, no great results could be attained. Power to grasp the intricacies of any subject only comes by patient study; and practical excellence, in any department, can only be secured by daily, persistent toil. So that, if there be any among you who feel unnerved at the prospect of commencing, let me assure you that the victory is always to the persevering.

Difficulties will be met with, many times you will be disheartened by failures; but, from my experience, one failure is ever worth two successes. The elation consequent upon the first success, leads to forgetfulness of many minor details, or it may have been one of those lucky hits that occur so frequently in every-day practice, and cannot be repeated. But, let failure cross your efforts, if you are made of that stern material that bends, but never breaks, you go bravely to work, and intelligently endeavor to solve the cause. The whole subject is conned over, and when the attempt is made to renew the work, you are in a degree, thorough in the knowledge of the whys and wherefores that produce so undesired a result. Do you imagine if I were to ask one of you a question, and he should fail to answer correctly, that that question would ever be likely to be forgotten? It is my intention during the course of these lectures to ask you many such, not particularly for the purpose of developing what you know, but to learn wherein I have failed to make myself clear. I know, from personal experience, that this questioning is an ordeal the student would gladly dispense with, and to avoid it many are very willing to occupy the back seats "in the sanctuary." This is wrong, because, if the questioning were confined to the front rows, the advantages of the Quiz would be lost, in a great measure, to those who lacked confidence to meet the ordeal.

The lecturer takes no satisfaction in exhibiting the weak points of any one, though in a certain sense there is some satisfaction in it, inasmuch as I believe one question wrongly answered, is worth more to the individual, and the class, than a correct one. Do not misunderstand me here; I would not have, nor should I be at all gratified to have, any very great number answered wrongly upon all occasions. That would indicate either gross inattention on the part of the students, or lack of ability to impart knowledge on that of the teacher; I therefore hope, gentlemen,

that no one will be so modest as to take a back seat for the reasons enumerated; if they do, I am afraid it will avail but little, as in justice to you, I shall entirely ignore the custom of confining my questions to the two front rows, and shall ask them indiscriminately.

I am here to teach, not to deliver finely pointed essays, but to endeavor, if possible, to inspire those who have come to listen, with a belief that a large portion of the labor devolves upon themselves. Those of you who have not acquired the habit of correct thinking, must learn this by practice. In my judgment there can be no better way to exercise the faculties than in the manner proposed.

You come together to-day, many meeting for the first time. Acquaintance with each other's peculiarities has yet to be made. Strangers, as you are, a natural want of confidence in each other, and yourself, will be felt. The question will doubtless arise in the mind of the young student, if it will ever be possible for him to work, surrounded, as he supposes he is, by men who may know vastly more than he. This timidity will make itself manifest in many ways; but, particularly in that of procrastination. He will put off any effort to commence. He concludes he will not bring or will not purchase his instruments for a few days, at least until he gets better acquainted. This delay is lengthened out, as I have frequently known, until half the course had been passed over-every day the diffioulty of beginning growing worse. If there are any that feel thus in this class, I have simply this to say: an enemy met boldly, is an enemy half conquered. Go to work to-morrow, if you have your instruments, if not, procure them in time for the next day's clinic; get your Demonstrator to give you a patient and go bravely to work. It will be with awkwardness at first. Every plunge of the instrument will perhaps hurt you more than the patient, but every hour will add to your confidence, and the time will come when you will laugh at the timidity of the beginning.

Perhaps no one suffered more than your lecturer at the commencement of practice. Although brought up in the profession and destined for it from youth, I could not bring my mind to enter it; and, at one time left it, as I supposed forever, but circumstances sometimes mould men when least expected, and I now stand here to-day to lead you, I trust, to a higher appreciation of the duties you have adopted.

Much of the work we are called upon to perform is unpleasant. Many of the patients are equally so, both as regards their personal habits and nervous irritability. Learn early to mould yourself to the circumstances, and to do this, begin at once by not refusing a patient in the clinic, because he or she may not be as nice looking as the young lady opposite. Always remember this, that it is among the lower classes of society that you will be likely to find those abnormal cases, that possess so much interest for more advanced students.

A student, who will work on none but nice young ladies, will have a hard time of it when in practice; he may be called upon to treat the very reverse. I am aware it is generally more difficult to manage such cases, but your Demonstrator will tell you, and I will endeavor to show you in future lectures, that cases where uncleanliness has been the rule and the tooth brush the exception, require a course of preparatory treatment, and this, of itself, is a valuable lesson, and cannot be too soon learned. It is a great mistake in a student to reason thus: "I did not come here to learn how to clean teeth." If cleaning teeth is a part of your professional duty, and who doubts it, you came for just that purpose. Oh, but say you, any one can do that, I came to learn how to fill. When I tell you that in many cases it will be impossible to fill until cleaning has preceded it, you may possibly feel there is something for you to do in that direction.

The idea, so prevalent, that any one can scale teeth, I must positively dissent from. It requires nice care and judgment to perform well, and I am sorry to say but few students ever acquire it, simply from the fact that they viewed it in a contemptuous light at the beginning. There is nothing, gentlemen, in the whole round of studies that it will do to neglect. So intimately is one operation woven in with, and dependent on others, that he must be skilled in all, who would do his work thoroughly. Knowledge is ever progressive, but the first steps must be carefully trodden, before we can boldly stride onward to greater attainments.

I have now brought you through the beginning; are there any other points you should carefully attend to? Yes. First of all, cleanliness. Let your hands be clean. Wash them well, where your patients may see you do it. Pare your nails, to the quick, if necessary to get them short enough, for long ones are an abomination.

Times have changed, the dentist is now expected to be the gentleman in all respects. Just in proportion as he approximates this standard, will he command that class of patients, who measure a man's abilities very much by the outside appearance. I am aware that this is not always a safe guide, and yet the world is not over wrong in this judgment, as far as our profession is concerned. For he who lacks nicety of detail in surroundings and in person, will most certainly lack in that manipulative excellence, so essential in all our departments. The time has long passed, and I trust never to be revived, when under the old squeaky tin sign of "John Jones, Barber, Leecher, Bleeder and Tooth Extractor," suffering humanity walked in, to endure a repetition of the tortures of the inquisition. The barber has found his specialty, and I am happy to believe that we have at last found a landing place, so far in advance, that even he must forget the relationship that once existed between us. Is it not a

sad reflection to contemplate the fearful destruction in those days of wholesale tooth pulling? No marvel that our grand-parents were toothless at a very early age, and that the occlusion of nose and chin was considered a necessary feature of advanced years. All this has changed, now our fathers and mothers pass down the valley of the shadow of life, with the contour of the face almost undisturbed, with health improved, and strength, if not equal to youthful vigor, at least not shorn of half its power by badly digested food. The old barber's sign still swings, but he plies his art upon the outside of the face, and not amongst the "pearls of great price."

It will be well to have a second coat, a thin one is preferable. This is necessary in our operations. The large amount of hair dyes, oils, &c., used now a days, will ruin a coat in a very short time, also rendering it unfit for any future patient. It must therefore be of a character that can be washed, and you will find that it will require requent changing.

Having seated your patient, avoid touching more than is absolutely necessary, but above all never suffer yourself to sprawl upon the individual, as I have repeatedly seen. Make your patient as comfortable as possible, and do the same by yourself. Don't hurry in anything, and imagine because your neighbor, who is in his second course, fills a tooth well in an hour, that you must do the same. This is foolish reasoning.

Speed comes by practice, and the adoption of the best modes. When I use the word practice, I do not mean to be understood as it is generally used. Practice does not make perfect, it only confirms. Perfection or comparative perfection, for there is no such thing as reaching the ultimate of knowledge or practice in this world, comes by patient study of results, and the means used to produce them. It has been this intelligent adoption of means to ends, that has brought our profession out of darkness, into the high noon of excellence, in all departments.

The instruments that you will require are few, to these you can add as occasion demands or fancy diotates. I have reduced them to the minimum number for all. With these any filling can be put in well. It is far better to begin thus, as a larger number of instruments only confuses, while the application of the few soon grows familiar, and any number you may hereafter add are of course no burden to the memory. Many enter college with the idea that a handsome case of finely mounted instruments is essential to success; and are undeceived when they learn that an instrument is valued here, only as the point gives evidence of excellence. Handles can only be used to please and astonish visitors. It was a remark, often made by the distinguished and lamented Prof. Townsend, that his eyes were at the point of the instrument, and his estimate of its value was in proportion to the perfection of that part.

I would not have you conceive that I ignore entirely the beautiful, even in its minor exhibition in a dental case. The perfection of mechanical workmanship has no warmer or more ardent admirer than myself, but we must never sacrifice the quality of use, to fill our operating rooms with the beautiful in mechanics. My advice would then be, look at the point first, and do not rely upon your unassisted eye, but use a glass, and satisfy yourself that the serrations are clear, well-defined and sharp. The shape of the instrument is important but secondary. The handle a matter of no great moment.

You need, therefore, in addition to the instruments as we have them here, a stone to sharpen them with; the small Arkansas stone, which you will find at the dealers, is the best for this purpose. Wood for wedging, tape to polish with, pine or cotton wood for the same purpose, rubber tubing; the use of which for banding teeth will be shown you hereafter. You had better add to the a small alcohol lamp, the smallest you can procure. This list comprises all that will be absolutely necessary to begin with. The instruments for extracting are furnished by the college. In the use of these be as cleanly as possible. Don't do, as I have repeatedly seen done, take an instrument, all coated with the blood of one patient, and commence extracting the teeth of others. Such practices are exceedingly disgusting. I am aware that at times the rush of patients is so great that the temptation is to carelessness, and want of order. Nothing, however, is ever gained by hurrying or neglecting the niceties of life.

To those who can afford it, it may be advantageous to purchase their own extracting instruments early in the course, and become accustomed to their use; for I can assure you, the skill acquired in extracting is as much dependent on the confidence felt in the instrument used as upon the instrument itself.

We are aware that economy is, with many, a matter of great importance; hence to meet this well known fact, the selection has been made. There can be no objection to a student having any number of instruments he desires; but my advice would be for all to wait until one course has been nearly completed, before purchasing any large number. You will then be able to select with judgment, and not waste money on unserviceable tools.

I trust it is needless for me to say a word on the importance of using all the time in active work. You cannot afford to waste a moment. Think of nothing, and attempt nothing, but the studies and labor you are here to accomplish. The months are short, and the hour will come, only too soon, for you to give a final account of the knowledge you have acquired. Hours, even minutes, are valuable. They are the passing sands in the great hour-glass of life's development. However small, they mark an

epoch in the progress made toward the ideal perfection you have doubtless marked out for yourselves.

As it will not be possible for all to have chairs the same afternoon, do not think, on that account, that it is well to absent yourselves from the clinic. When thus disengaged is the time for you to watch the operations of others. More, perhaps, can be gained in this way, than by confining your experience to your own operations. Indeed, I would not advise you to limit your labors to your own patient and chair, if it were possible to do so. Much can be learned by using the eyes wisely, whilst others labor. The generous criticism that follows, and the discussions that ensue, evolve thought; and thought brings out new ideas, that might not otherwise be eliminated.

I have thought it best to call your attention to the Text Books that belong properly to the teachings of this chair. The earliest, of any real value to the student, was Harris' Principles and Practice. This has long been a standard work, and is yet extremely valuable in many of its features, and cannot be readily dispensed with. Its teachings in operative dentistry, are not exactly such as we would give you. I make this remark, not to depreciate the work, but that you may read with discrimination. Taft's Operative Dentistry is valuable as far as it goes. Its general teachings are reliable, and its practical departments are full, and in the main correct. Tomes' Dental Physiology is entirely out of print; unless you can get it second hand, you will not be likely to get it at all. Tomes' Dental Surgery, although much has been omitted that is important to know, yet it covers very much the same ground as his Physiology, and some points he elaborates to far greater extent. I consider this work one of great value. Indeed, I think no dentist can be up to the march of improvement in Dental Physiology, who is not familiar with the writings of Dr. Tomes. That portion devoted to fillings, extracting, &c., is not, in many particulars, up to the standard of the profession in this country.

I have spoken to you of your duties and the obligations they bring with them. What are mine, as teacher and leader, in this pursuit after knowledge? The duty of a teacher, if I understand it, is to so condense, that the researches, by whomsoever made, may be brought down to a practical basis, suited to the comprehension of the most unlearned. The nearest approach that can be made to this, designates the capacity of any one to instruct. All over-loading with words is a detriment. But of more importance and value, than all this, is the faculty of bringing the student to feel that no great gulf divides the two positions. The instructor should be, as much as possible, the companion; willing to give, and equally willing to receive. It is with this feeling that I enter upon the arduous duties I have been selected to perform. There can be none

among you who will work harder than your lecturer, or has labored more to bring together a fund of information for your instruction, and, if I have any reward in days and nights of toil, it will be in seeing you aspire to the largest amount of knowledge attainable in our profession, and the collateral sciences.

The borders of our profession are becoming broader every year; and he must be a close student who expects to expand with its continued and rapid growth. In the attainment of this knowledge do not depend too much on books. Make your own investigations. Authorities are valuable as guides, but a dependence upon them cramps the intellect. When you have advanced beyond the childhood of your professional experience, you should, by all means, do your own thinking.

It is of slight consequence should you fall across the path of old ideas and modes of practice. If the heretical opinion has for its basis stubborn fact, rest assured, sooner or later, the fogyism of your generation will be obliged to acknowledge its truth. I am well aware the courage to take this independent course in life is possessed by the few. It is a natural desire to live comfortably with all men, to make our path through life as pleasant as possible; in a word to float with the current of popular opinion, be that in science, art, religion or politics. No man ever made a lasting mark in either, who was not, in his day, a hissing and a by-word among his fellows. History is full of illustrations upon this point; but it is unnecessary that I should here repeat them. This fact is patent to all the world, yet we all feel prone to indulge in the comfort of sliding along in the old ways, rather than to subject ourselves to the jostlings, sneers, and absolute persecutions, that follow the stepping out from the fashionable modes of thought and action. No man's opinion should rule you as absolute. The avenues of knowledge are free to all. Should you, in the course of your studies, discover a fact capable of proof, plant yourself squarely upon it, and allow no amount of opposition to drive you from your position. "The world still moves," said Gallileo, when forced to recant, and the world will ever continue to move in all departments of life, though you and I may sink into semi-dotage, and imagine all minds ceased thinking, when we did. Hence, while I give you the benefit of the knowledge I possess. I desire that it should be put in the crucible of your own experience, before it is adopted as the best result attainable. Hold all that you believe subject to change, when sufficient new facts have been brought forward to justify you in so doing. A departure from this course is a sure lapse into professional bigotry, than which to me, there is nothing more disagreeable. There is a marked difference, understand me, between an emphatic belief in a principle of action, and a persistent unwillingness to hear or acquire the developments of other minds.

During the course of these lectures, emphasis will be laid upon many points of belief and practice, for that which is learned by direct observation inspires faith, and faith leads to positiveness of assertion; but remember that all such declarations are made, subject to modification, if the occasion ever demands.

I shall call your attention, gentlemen, in the ensuing course, first to the teeth of some of the extinct orders of animals, and shall then follow this up by a rapid survey of the teeth of existing orders of fishes and animals. These will, of necessity, be only cursory, for this department of knowledge alone is so full, that more than one course, if entirely occupied, would be required to illustrate the immense varieties presented. Leaving these, I shall take up the human teeth, commencing with the permanent series, and from this, will describe, in order, their tissues, and their development, as understood at the present time. I shall then divide the physiological part of the course, and introduce that portion of operative dentistry that relates to the treatment of caries, filling, &c. I do this that you may have the full benefit of the practical points at the opening of the term. I shall follow this up by calling your attention to the development of teeth, &c., and continue with such other subjects as come appropriately under the care of this chair.

The field is a large one, and one of great interest to you, as it comprises, in the main, most of those practical points, upon which your success in life must in a great measure depend.

Gentlemen, most of you are just opening upon life's career. You look forward with minds full of enthusiasm to a future, in which you will admit no such word as fail, and which is all aglow with golden promises, stored in the mythical bank of the castle builder. I would not, if I could, disturb these day dreams of young life. It is well it is so, for alas, too soon we all know, by actual experience, that our castles become thin air as we approach them, and that every mile may be roughly strewn with impediments to rapid progress. I would encourage this feeling, perhaps, because I ever had so little of what the world calls hope, in my own mental constitution. It is pleasant, many times, to see in others, what we are constitutionally deprived of. To me there is nothing so pleasant and attractive, as a joyous young child, dancing with exuberance of delight at an approaching holiday. It is the pure, hopeful enthusiasm, that sees no disaster, and believes in no disappointments. Such spirits ride the storms of life calmly, ever looking in the great beyond for the certain reward that is to come. So I would, if I could, instil into those of you who have not yet reached a quarter of a century of life. The profession you have chosen is one not always studded with brillants; like every other, it has its dark and bright sides, but, if it is entered fearlessly, persistently, and hopefully, there can be but one result, with life and strength preserved, success.

To those of you coming from the country for the first time, to a large city, and have not the steadiness which a few more years of experience might give you, I have a word of caution. You mingle with us for a special object, that object can only be attained by constant labor. You have no time for the frivolities of city life. Neither should you allow the many tempters, that will meet you everywhere, to allure you from the path of rectitude, and an earnest application to study. Remember the blessing that followed you openly, or in secret, when you bid the last farewell to father, mother, sisters or brothers, the anxiety of these, that you should return unstained an honor to the family circle. Your reputation is their honor, and the name you carve for yourself may, in the future, be their glory.

Life is too short to be spent in trifling, too great a treasure entrusted to us to be thrown away and wasted. Then, I would ask, is it not better to keep this motto ever present before you? I build for the future. It is no trifling matter, gentlemen, to leave home, friends, and the companions of childhood, to spend even a short four months amongst strangers. One who is willing to make thus much of a sacrifice, is worth too much to be lost in the many puddles of city life. Therefore do I repeat, allow no man to draw you from the direct line of duty.

In conclusion, I trust, that the winter we have before us, may close with the feeling that it has been spent pleasantly and profitably. That those of you, who have come from all parts of our beautiful and free land, from the islands of the sea, flooded with the warm breath of tropical life, or from wherever you may have come, you will realize that the sacrifice has not been made in vain, and that, in returning to the old homestead, you may receive the congratulations of the loved ones around the old hearth-stone, of well done, the commencement of life has been fairly begun, may the closing hour be equally as full in works well accomplished.

TREATMENT OF THE ANTRUM.

Read before the Pennsylvania Association of Dental Surgeons.

BY J. D. WHITE, M. D., D. D. S.

MR. PRESIDENT AND GENTLEMEN:—By request I appear before you, after a lapse of years, to read a short essay; this I do with the greatest of pleasure. I select the above subject, the treatment of the antrum, because it is a kind of, and, indeed, is truly a line which marks the division between dentistry proper and general surgery. It is on this ground that the dentist and surgeon will meet, and from this stand-point be better able to comprehend each other's specialties more clearly, perhaps, than

any other in the whole round of diseases to which the human subject is liable. Writers on the diseases of the antrum complicate it at once with malignant disease; humors of various kinds, differing from that which concerns the dentist, so that he, the dentist, in attempting to study them, is carried away into the abstruse field of surgical science, which is entirely beyond the range of his specialty. It is no matter how much a dentist knows of disease in general, but it should be made clear where his duties stop, so that there could be no equivocation on the part of any one whether he is occupying his true field of labor or not. By reference to a few cases this point can be made plain.

Case 1. A few years since a neighboring dentist called to see me to ascertain whether I would see a patient for him, who was suffering with his teeth; the three superior molars. I found the gum and the cheek considerably swollen, patient about fifty-five years of age, and instead of the teeth being the cause of the trouble, it was a disease of the jaw which had involved the teeth. The disease was of a fibro-cartilaginous character, and of a malignant type. I told the dentist and the patient that it would be necessary to remove the whole of the superior maxillary, but believed it was too late. The operation of removing the jaw was performed by the late and distinguished Mütter, but the patient died in about six months. If this dentist had been sensible of his proper field of duty, he would have sent the case at once to a surgeon; the patient lost his life, prematurely, by the ignorance and mistaken duty of this dentist. The dentist supposed it was a case of disease of the antrum, complicated with the disease of the teeth.

Case 2. A young man was sent to me, a few weeks since, by a distinguished surgeon of our city, whom he had been treating for some months for ulceration of the membranes of the right nostril, from which there was a fetid discharge; his teeth were all sound, I mean free from decay, but one, the second molar, was somewhat loose; this tooth I extracted. (The tooth is here shown.) It is entirely sound, except that the partition root is diseased from ulceration and necrosis of the floor of the antrum, which was the result of tertiary syphilis. After extracting the tooth, the patient was sent back to his surgeon, as I had no more to do with it than if it had been a case of gout.

These cases are given to show, that had they come into my hands at first, I would have sent them to a surgeon for treatment; the first one to get the jaw removed before it was too late, and the second case to go under systemic treatment, such as only belongs to the surgeon and not to the dentist, although, in both cases, there was disease of the antrum and jaws. The dentist is auxiliary to the surgeon in such cases. It is too much the practice of the dentist, in my opinion, to enlarge the importance

of his duties and his profession, by retaining cases of disease of the antrum and the jaws that in no way belong to him, or his sphere of duties, much to the detriment of the patients. I may ask here, then, does the treatment of the antrum even come under the province of the dentist's duties? I answer yes. The citation of a case or two will illustrate.

Case 1. A gentleman, about fifty years of age, called to consult me, in November, 1862, complaining of a fetid discharge from the left nostril and the throat. He had been treated for a long time for ulceration of the throat and posterior naries, without any apparent relief. He fancied he had ulceration of the throat, and as no relief had been obtained by treatment, he feared he had disease of the lungs; the pus trinkling from the posterior naries into the throat, and exciting cough, caused him to discharge pus, which he supposed came from the lungs, and which preyed so much on his mind that his general health was much impaired. I found the left superior second molar dead, and had been for many years, but it had never been a cause of pain. I could detect no disease of the lungs or ulceration of the fauces or throat, and if such had been the case it would not have been fetid, especially that peculiar kind that characterizes disease of the antrum, which is analogous to rotten eggs. There was no soreness along the base of the antrum, no looseness of the dead tooth, but there was some fullness of the canine fossa of the affected side; a little infiltration into the cellular tissue of that side of the face; symptoms which are always present in disease of the antrum, and taken in connection with a fetid discharge from the nostril, are unmistakable signs of the disease of that cavity. This patient had been under many physicians, but no one was willing to believe he had diseased antrum. I extracted the dead tooth, and found that from the anterior buccal root the floor of the antrum was open; upon injecting tepid water through the antrum into the nostril, a great quantity of matter and flocculi were discharged. If I find that simply keeping the parts clean does not, in a short time. ameliorate the symptoms, I use the chloride of zinc, ranging from two to twenty grains, sometimes nitrate of silver, from two to ten grains. The patient was placed on good diet, the orifice from which the tooth was extracted kept open with a tent of cotton, the cavity syringed out twice a day for a short time, then, as the symptoms improved, only once a day, and at last once in two days. The orifice was allowed to contract as the symptoms improved, until the water passed out of the nostril clean and the fetor disappeared. The tent of cotton was left out, the walls of the orifice leading to the antrum touched with nitrate of silver, and the parts healed up finely. The case lasted four months in treatment.

Case 2. The same patient was attacked, in the fall of 1863, with disease of the antrum, of the opposite side, from a dead tooth which was not

decayed, but had become dead from some unknown cause. The tooth was drilled, to test its vitality, before extracting; only a fetid discharge from the right nostril, and fullness of the canine fossa of that side, led to the diagnosis. In two months the case was cured by similar treatment to the first case.

Case 3. A lady, about forty years of age, called to consult me, October 4th, 1865, complaining of a fetid discharge from the right nostril, and sometimes from the throat, some pain all over that side of the face, fullness in canine fossa, some tenderness on pressure, and slight redness of that cheek. I found that the first superior molar was dead, and had been for a long time; there was no soreness of the tooth, no sensibility on percussion. I extracted the tooth, but could find no opening to the antrum. I sent the patient home to return in a few days, because some cases of the kind have become sound spontaneously, with nothing more than the removal of the dead tooth. The patient returned on the 10th of the month. I found the floor of the antrum open. I passed a current of tepid water through the antrum into the nostril, disengaging a large amount of pus and flocculi, very fetid. It is not often that pus is found in the cavity of the antrum after a tooth is extracted, especially after a few days; it is only vesicated mucus, similar to that secreted from the Schneiderian membrane of the nostril during a severe catarrh. It is best to test the centents of the cavity by pouring it into a tumbler half full of water; the pus will sink and the mucus float, and strong stimulants should be avoided when pus is not found there. After the first day, I used a weak solution of the chloride of zinc. I saw the patient every day for awhile; when the symptoms improved, every other day, at last every three days, and discharged the patient, cured, November 27th. I use a tent of cotton, passed into the cavity, to prevent the too rapid closure of the socket from which the tooth has been extracted. I am in the habit of letting it close as fast as I see the case is improving, so that when the lining membrane of the antrum has regained its normal character, that the orifice will speedily close, and the case is cured. The more rapidly those cases can be cured up the better, as an antrum is not in a normal state with its floor perforated, and the sooner it can be closed the less liability there is for the establishment of other forms of disease, and as the lining membrane of this cavity is delicate, and liable to many forms of disease, it is unsafe to tamper with it. I might remark here that some surgeons are in the habit of introducing a leaden plug, with a flattened head, to prevent it from being, by accident, forced into the antrum. I do not approve of it in a simple case of alveolar-antral abscess. If the case is for protracted treatment of malignant disease it is another matter. I know of a case, and often see it, where a leaden

slug has been worn, by the advice of a surgeon, since the 17th of September, 1860, and the case is worse now than when the treatment commenced, and a few weeks since one of the turbinated bones of that side of the naries became dislodged, and on the patient lying down it fell back into his throat; and another case, where the leaden plug was worn for three years, the inner walls of the cavity were much thickened, and the orifice of the floor of the antrum would not heal up. After what has been said it will doubtless be seen that where an antrum is only affected by alveolar-antral abscess, it can be left to the dentist to manage, but where the cavity is involved in consequence of systemic diathesis, or malignant local disease, it is not a part of his profession, but it is here where the intelligent dentist and surgeon will or may often meet to the mutual advantage of each other, as well as the suffering patient.

IRON.

BY T. L. BUCKINGHAM, D. D. S.

[Continued from p. 30.]

The affinity of iron for some of the other elements is so great that it is rarely found in the metallic state. A small vein is said to have been found in Connecticut, but it has attracted little attention. Grains of the metal have also been found mixed with platina in the Ural mountains. But the principal source of the native metal is of meteoric origin; masses of it have been found so pure as to be malleable and widely, although thinly, scattered over the earth's surface; one mass was found in Texas that weighed 1635 pounds, and another in Brazil of 15 tons. These masses are usually not pure, but are alloyed with nickel, cobalt, tin, copper and manganese. The great source from which the metal is obtained is its ores; they are very abundant, and widely distributed over the earth. Some of them are very rich, while others are too poor to be worked. The magnetic ore is a composition of the per and protoxide, and is the natural magnet or loadstone. It was called by Pliny magnes, from the name of the country Magnesia where is was found, and from this we derive the terms magnets and magnetism. The name loadstone, or leadstone, was taken from the two words load or lead, from its property of pointing North and South when freely suspended. This ore is usually very rich, and from it is obtained the best iron. The greater portion of Swedish iron is obtained from this ore.

The specular iron ore, peroxide, is another ore that is worked to obtain the metal. It is found in large quantities and is very nearly as rich as the magnetic. It is sometimes as hard as granite, and then as soft as clay; there are several varieties, but they are nearly all of the same composition. When this ore is powdered it is of a red color, and one of

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the varieties is called red hematite, from the Greek word haima—blood. Both of these ores, when fused in the inner flame of the blowpipe with borax, give a green glass bead.

Spathic iron, carbonate of iron, is an ore that is extensively worked: it yields a good iron. It is composed of the protoxide of iron and carbonic acid. From these ores nearly all the iron in commerce is obtained. Some of the other ores are sufficiently rich in metal to be worked to a profit, but as they contain sulphur, phosphorus, arsenic or some other element which injure the iron they are not worked for the metal.

Iron pyrites, bisulphuret of iron, is very common and is of great importance in the arts, as it affords the principal parts of the sulphate of iron, green vitriol, or copperas, of commerce, and is also used to obtain sulphuric acid, sulphur and alum. The color of this is yellow, resembling gold, and is often mistaken for it, but they may be easily distinguished from each other by cutting with a knife, or heating in the flame of a blowpipe. The iron pyrites is too hard to be cut with a knife, and when heated gives off sulphur and leaves a black bead, while gold can be cut very readily and melts under the blowpipe.

The other ores of iron, although numerous, are of not much importance in the arts, except the chromic iron, or chromate of iron. This is found in abundance in various parts of the world, and from it is derived chromium and chromic acid, which forms a number of compounds used for painting and dyeing.

To reduce the ores, two processes are adopted. When the ore is very rich and plenty, so that a portion of it can be lost, it may be worked by what is called the Catalan method which probably was the way all the iron was obtained in olden times and is still used in some parts of Europe. portion, of the rich oxide, is laid upon a mass of ignited charcoal in a furnace suitably constructed, a blast of air being forced in near the bottom of the furnace; the oxygen of the air combines with the carbon and forms carbonic acid, which, passing up through the heated charcoal, is deprived of one equivalent of oxygen and becomes carbonic oxide. The carbonic oxide coming in contact with the oxide of iron takes the oxygen from it, which reduces the iron to a metallic state; but as the iron ore always contains quartz and clay, both of which are nearly infusible, unless mixed with some base, a portion of the oxide of iron combines with them and forms a fusible glass, which, falling down with the iron, protects it from the blast of air which would oxidize it if allowed to blow upon it in the heated condi-When a sufficient amount of iron has collected in the bottom of the furnace, it is gathered together and carried to the hammer where it is worked into bars. By this process wrought iron is made directly from the ore, but the process is not an economical one, as a large portion of

the iron goes to form the slag. Only the richest ores can be used in this process; if poorer ones were used, the whole of the iron would be used in forming the slag.

The process now adopted to reduce the ore is by the blast furnace. I will not attempt to describe a furnace of this kind, further than to say that they are built of the most refractory material that can be procured, as the heat in them is very intense, and, unless carefully built, they burn out in a short time. They are from forty to seventy feet in height, and from twelve to eighteen feet in diameter at the widest part.

The ore is prepared by first roasting it, which is done by placing a layer of fuel on a level piece of ground and a layer of ore on it. This is repeated several times, and then it is covered with loose earth and set fire to. This is done to drive off the carbonic acid, sulphur and other volatile ingredients, and open the texture of the ore.

The furnace is filled with fuel and slowly heated, which requires from ten to twelve days. The heat is not increased very rapidly, as the furnace might be injured by being heated too suddenly. When the temperature is sufficiently high in the furnace, a layer of the roasted ore is put on the top: when this settles down, a layer of fuel is put on it, and then another layer of ore; this is repeated as long as the furnace continues in blast. A furnace will last from two to four years, and sometimes longer, when well constructed. As has already been stated, iron ores contain more or less quartz and clay, and as these require some other substance added to them to make them fusible, and the object being, by this process, to obtain all the metal possible, another substance has to be added to act as a flux. For this purpose lime is used, and although it does not make as fusible a slag as the oxide of iron, still it is more economical.

After the furnace has been lighted, a large quantity of air is forced in near the bottom by a blowing machine; the oxygen of this air, coming in contact with the heated coal, combines with it and forms carbonic acid: and, as we have seen in the other process, when carbonic acid comes in contact with heated carbon it gives up an equivalent of oxygen, and is reduced to carbonic oxide. This oxide acts on the iron by removing from it the oxygen which restores it to carbonic acid again, and, as the temperature is very high, the carbonate of lime is changed to quick lime, which combines with the quartz and clay, and forms a fusible slag. The iron at this high temperature has an affinity for carbon, combines with it, and forms carbide of iron. This and the slag being both in a fused state fall down to the bottom of the furnace; the iron being heavier sinks to the bottom, while the slag protects it from being oxidized by the hot air. When a sufficient quantity of iron is collected in the bottom of the furnace, it is allowed to run off into cavities made in sand, where it cools, and

forms what is called pig iron. The amount of air forced into one of these large furnaces in twenty-four hours is almost incredible. It has been estimated at 6192 cwt., or 6292 cubic feet per minute; while the weight of fuel, ore and limestone was only 6661 cwt. This amount of air passing in cold reduces the temperature; by introducing the air heated between 600° and 700°, has greatly reduced the quantity of fuel. This is done by burning the gas that escapes from the top of the furnace; for, although a portion of the carbonic oxide is consumed in reducing the iron ore, a much larger proportion escapes at the top, and, by conveying this in suitable pipes, it is burned under heaters, through which the air has to pass before it enters the furnace.

This is a mere outline of the process of reducing iron ore. To describe the process in full, would take more space than we can give in the TIMES. Iron produced in this way is not pure, but contains a portion of carbon. The amount varies very much, but approaches nearly six parts in the hundred. The carbon renders the iron fusible, and, in this condition, it is used for casting.

IS YOUR LIFE INSURED? BY GEO. T. BARKER, D. D. S.

From an editorial article in the January number of the London Lancet, on The Insurance of Life, we make the following quotation:

"The propriety of life insurance commends itself to the approval of every prudent man. It affords to many the only means of making ultimate provision for their families, and offers to all an opportunity of having money at their disposal for posthumus distribution. Its advantages are present as well as prospective."

For some time previous to reading the article above briefly quoted, my attention was drawn to this subject as eminently worthy of consideration in a dental journal, for I know of no class of men to whom to a greater extent the subject recommends itself, and by whom, as far as my experience goes, it is so completely ignored as dental practitioners. The merchant, the manufacturer and the artizan recognize and appreciate the value of life insurance, and why? I answer, because they have daily presented to notice the uncertainty of worldly possessions; houses of long-established reputation and credit, of reputed, and with often extensive wealth fail, or ask extensions, and are obliged to begin the world anew at the foot of the ladder where they commenced years previous. A commercial crisis appears periodically, and the prudent merchant expects and prepares for the winter of misfortune and unexpected loss of wealth; and how does he do this? By insuring his life, so that when loss of wealth and death comes he does not leave a wife and family unprovided for, who,

unprepared for that fearful struggle with poverty, yet in order to gain a means of living, must battle with the hard, hard world, who can give nought but cold neglect. Let me, for example, look back only so far as 1855 and 1856: I then could point out merchants and manufacturers whose names were a tower of strength, and whose fortunes were considered secured beyond the possibility of loss. How many of them now stand, and if still in existence, do we not find that, to save their mercantile credit, their property was sacrificed, and many, many even then were obliged to succumb and yield to the unexpected loss of fortune and business? But how fares it with the professional man, the physician or the dentist? I contend, and expect to prove, that these men, above all others, are more liable to loss of fortune than any other class of men. Take for instance a dentist, who enjoys a lucrative practice, by which he lays by a certain sum, say one or two thousand dollars yearly, he accumulates, in a few years, a respectable sum of money-provided he has health, which few dentists enjoy-upon which he eventually expects to retire, but in his professional career, he becomes intimately acquainted with some banker, broker, or speculator on the "ground floor," who dazzles his eyes with the prospective "good thing," and unaccustomed as he is to business, he places his hard-earned profits in what may truly be called a "permanent investment." But there are certain reasons which impel professional men to embark in speculation to which I would direct atten-Such men as I have already stated, from their daily habits, become unfitted to be what I might term business men—a term which may not be comprehensive to some, yet by it I mean a peculiar power which a merchant must necessarily cultivate, to weigh judiciously the prospects of gain, and the possibilities of loss. The professional man, not being in the habit of employing this power, is like a mariner who sails without chart or compass, and whose chances are most sure for shipwreck. But there is one still more potent reason why these men yield to the spirit of speculation. merchant or manufacturer, as he makes gains, can profitably invest them in his business, seeing there the legitimate field for investment; again, too, he knows full well that loss, made outside of business, affects, detrimentally, his mercantile credit and standing. But the physician or dentist has no such drawback. He says, I have the money idle, paying, perhaps, but a small percentage yearly, if I invest it I may make a large fortune, which I cannot hope to do in my practice in many years; another thing, if I loose it, it will not affect my business, and then, too, I have so much confidence in the judgment of my friend, who, as a great favor, lets me into this sure thing. This, my professional brethren, is no fancy sketch; I know a similar case well, and the physician of whom I write saw his hard earnings swept away, and not only that, but in the flower of

resefulness and manhood was called from life to death, from works to rewards; and his beloved wife, who, during his life knew nought of poverty, has now to support herself and family by her needle. God help her, say I, in her affliction, for indeed she has much need; but may an all-wise Providence also awaken the minds of professional men to see that it is the duty of each one, who has persons depending upon him for support, to insure his life, so that, in case of sudden and unexpected death, they will not be left unprovided for. The legislators of the different States, recognizing the value and usefulness of life insurance, have provided that the debts of the insured cannot be recovered from the funds paid to the widow, or others for whose benefit the person was insured. It is, therefore, truly a safe and permanent investment, requiring only that it be entered into with a responsible company, and we are glad to state that there are many such in different parts of the United States; and as the calculations as to the average duration of life can be figured out to a certainty, it is for life insurance companies, a legitimate, safe and profitable business. But the advantage of life insurance need not alone accrue to heirs; the insured himself derives benefit. Every physician knows that one great cause of failure to overcome disease is the influence of the mind; if a person is ill, and his mind is not at rest, the efforts of the medical adviser are set at nought; his fear of death, and his dread of leaving a family unprovided for, has hurried many a man to the grave. This is avoided by the person whose life is insured, and he has nought to fear that nutrition will be modified by nervous influence, the effect of which we cannot appreciate, or understand.

Again, persons can insure their lives, as collateral security, for the payment of debts; the wife for her husband's benefit; and some responsible companies insure the payment of certain sums at certain specified ages. From a little work on this subject, we make the following extract, withholding the name of the company, because our desire is not to advance any special interest:

"THE OFFICE OF LIFE INSURANCE.—By it the husband leaves a staff on which his wife and children may lean for support when the head that planned and the hand that toiled so gladly for them lies cold in the grave.

By it the noble and affectionate son provides for the support and comfort of aged parents, who have watched over and nourished him up to manhood, should be die before them.

By it any man or woman may provide for a moderate competence in old age, by the payment of small sums annually during early and middle life.

By it the kind parent or friend may endow a son or daughter with a hardsome start in life on attaining majority, by the payment of an annual sum from their infancy, which most persons can pay without feeling it a severe barden.

By it the prudent merchant, mechanic, farmer, or professional man may provide the means to pay off the mortgage on his home, and thus feel sure that in the event of his unexpected death that home will not pass into the hands of strangers.

By it the conscientious debtor can provide the means by which to protect the creditor, who has been his confiding friend, from suffering by him in

case his life shall be out short before that just claim is satisfied.

In short, this noble institution is a means by the aid of which, with forecast and economy, any person may provide against some of those sad consequences of premature death, the thought of which often haunts the mind when in health, aggravates the power of disease, and embitters the dying hour. None but the man who has experienced it can feel how traly agonizing is the thought that his beleved wife may soon be a widow and his children orphans not only, but that the opportunity of shielding them from want and providing for them a home has been neglected until it is too late.

Every young man just starting in business or just entering upon married life, every middle-aged man in any walk of life, every man and many women should ponder the question whether, in neglecting to embrace the advantages which this institution offers, on terms which are available to all, they are not despising and neglecting one of heaven's choicest blessings."

Reader, have you a mother, wife, children, or others dear to you depending on you for support? If so, we beg you to ponder this subject well, and ask, as you lay your head on your pillow, have I laid up treasures on earth for these loved ones, "where moth nor rust can corrupt, and where thieves cannot break through and steal?"

ON "SUBMARINE" FILLING.

BY H. SCOTT, D. D. S.

BRIDGEPORT, Conn., Dec. 6, 1865.

Dr. H. Scott.—Dear Sir:—I have been reading an article written by you, for the DENTAL TIMES, in which you state that you are able to make equally as good a filling, "submarine," as by any other method. Will you kindly communicate your mode of doing this to the TIMES, that I, with many other students, may proffer by your experience and instruction.

Yours, respectfully,

FRED. R. R. CROSBY.

When I first read the above, I thought there was a masked doubt in the mind of the writer. I may have been mistaken.

There is nothing peculiar in my method. Success simply requires mechanism and carefully conducted labor. It is only in the lower teeth, of course, where I have sometimes been compelled to disregard the "flood." The cavity must be round. If there are any crevices running out, as is

sometimes the case in the molars, I fill these first, thus making my cavity round. There must be good retaining points; that is, the dove-tail shape must be formed. I manipulate my adhesive foil with the fingers, into blocks and balls, until they are quite firm, and make as few of them answer as possible. These I mallet home substantially. I usually introduce my last block in the centre, shaping the place for its reception as an independent cavity. This kind of work, when artistically done, is simply a pile of masonry, the blocks of which fit together air and water tight; and if the borders are firm, the body of the tooth pretty round and the surface well finished, the work is just as good, and will endure as long, and preserve the tooth just as well as work done dry. I see occasionally fillings made by me in this mode from fifteen to twenty years since, with no indications of failure, and no apparent reasons why they might not be just as good fifteen or twenty years hence.

I have long since learned that some things can be done as well as others. I fill teeth dry when it can be done, because it is better and more convenient to do so; but there are mouths, where the saliva flows in so rapidly, that no method that I have ever known will keep it back, especially from the sublingual ducts; and I am satisfied that, in the early years of my practice, I directed so much of my attention to the ways of keeping the cavities dry, as to interfere materially with the success of my work.

The important ends to be attained in successful tooth filling, as all know, are firm borders, good retaining points, and solid work, with no possible crevice for the admission of fluids around the filling. Any method that will accomplish these will be a success, and any defect in either of these requirements will be followed by a failure. The best adhesive foils do not adhere, at any rate, where the surface has been made hard by the steel. There is no difficulty whatever in making durable work "submariue." Good mechanism, and patient, well-directed labor, will accomplish it.

LANCASTER, Ohio, January 6th, 1866.

REMOVAL OF A PIECE OF BEEF BONE FROM THE MOUTH OF A OHILD.

BY C. A. JORDON.

GENTLEMEN:—Some four weeks since a highly respectable lady of this city called at my office to consult me in relation to her little daughter, about four years of age, for whose precarious condition she manifested much concern. The lady stated that for the last five months the child had suffered terribly from "canker in the mouth," for which she had been under constant medical treatment during this whole period.

The first glance induced the belief that the disease was not in the

mouth, but in the antrum. The mouth indeed was very sore, the breath almost unbearable, the cheek red and swollen, the eye inflamed and half closed, and the general health greatly impaired. I commenced an examination of the teeth, which I found to be entirely sound and unusually perfect. Prosecuting the examination more minutely, I discovered that the two molar teeth on the right side of the inferior maxillary were loose, though perfectly sound. Locating the seat of the difficulty here, by probing with an instrument, I soon discovered a movable substance lodged between these two teeth.

Taking two pointed instruments, one in each hand, and applying them to the ends of the substance, I succeeded without any difficulty in lifting it out from its bed. Upon examination, the intruder proved to be a piece of beef bone one eighth of an inch in length, about the thickness of a wafer in the centre, and terminating at either end with a sort of bulb, which rendered it impossible to remove it in any other way than that which I adopted.

The gum in the immediate vicinity had suppurated, and the alveolar process was in process of absorption and decay. How the bone got there is a matter of conjecture, but it probably was taken into the mouth with soup, as it presented the appearance of a chip or fragment of a soup bone. That it should have remained so long without being discovered by some one of the physicians who were called to prescribe for the case, seems almost marvelous. That it would have resulted in death, in less than five months more, I have no doubt; but with its removal, the health of the little sufferer has become quite restored.

BANGOR, Maine.

Note.—We rarely think it our duty to dissent with the diagnosis of a practitioner unless we can examine the case, but the above looks more like necrosis and exfoliation of a portion of alveolar process than like a beef bone, but we do not say such is the case.—Ed.

FROM what, we can learn, unofficially, the number of students in attendance at the different Dental Colleges in the United States is much larger than ever before, there being, in the aggregate, about one hundred and eighty; this, however, is about one-third the number that should be in attendance, but as large bodies move slowly, and when once started are not arrested by trivial impediments, so we shall hope to live to welcome the day that each school will have a class of at least two hundred—then teaching will not be what it is at present, entirely a "labor of love."

INDIA RUBBER CONES FOR POLISHING VULCANIZED RUBBER.

Before I began to use vulcanized rubber as a base for artificial teeth, I had seen several of my professional friends using pine and cork cones, with sand paper attached to them by a ring of metal forced over the sand paper till it came near the base of the cone, which was attached to a small lathe, for the purpose of smoothing and polishing vulcanized rubber. That plan of procedure was always somewhat unsatisfactory to me, and I had received from a friend a piece of cast-away India rubber, which had been used on a railroad car, and laid it away for some future use, but at the time I did not know what I would want it for; but, as the pine wood cones did not last, nor work well with me, nor the cork cones, which were what are called jug corks by dealers in corks, I concluded to try how a gum elastic cone would work, and selected as sound a portion of the old rubber as I could get, cut out a piece as smooth as I could with my pocket knife; (but it was not very easy to work smooth, and dulled the edge of the knife very badly.) The largest one I made was about two and a quarter inches long, one and a quarter inches in diameter at the base, tapering to about half an inch in diameter at the point, which was rather too large in case a man had but one, but I find it advantageous to have two; one about one-third the size above mentioned. three sizes, but would recommend but two for that purpose.

Having used these three cones a great deal, I find they answer the purpose much better than anything else I have tried. They wear out very slowly, and their elasticity permits pulverized pumice stone, and tripoli, moistened or wet with water, to adhere sufficiently to answer the purpose very well. I found some difficulty in getting a hole in the centre to insert the tapering screw that belongs to and accompanies the hand and foot lathe, but I succeeded by the use of a tyne of a rat-tail file, which I heated a little, and by that means bored and burned it until I could screw it on and make it fast to the lathe.

If other dentists have not discovered anything better adapted to the purpose, I would respectfully suggest to the manufacturers of gum elastic toys and wares to prepare a mould with a conical central piece in it, so as to form a small hole in the cone, extending about two-thirds of the length, and manufacture a sufficient number of them to supply all the dentists who use vulcauized rubber as a base for artificial teeth: but if there are any other means better adapted to the purpose, I would be pleased to know of it, as I have been seeking the best means of performing the duties of a dentist for many years, and have rejoiced at many of the improvements which have been made, and gladly lend my feeble aid in the advancement of our profession.

Bdftorfal.

TO THE PROFESSION.

That there should be some standard to separate those dentists who are well qualified to practice their profession, from others who are deficient in all the requisite qualifications, every well-informed practitioner must admit. But how can that standard be established? It will not do, at the present time, to divide them into those who are regular graduates of dental colleges and those who are not, and state that graduates alone should be recognized as dentists, for dental colleges have not been long enough in existence to make this the dividing line. Many dentists are now practicing who commenced before the first dental college was established, and others, by hard study and close application, have fully qualified themselves, and should be ranked as high as any in the profession. In order to assist in forming this dividing line, the Faculty of the Pennsylvania College of Dental Surgery have agreed, to allow those dentists, who have been in continued practice since 1852, to be eligible for graduation, without attendance on lectures at the college. The candidate for graduation must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must also undergo a satisfactory examination, when, if qualified, he shall be recommended to the Board of Trustees, and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

A REPLY TO "ARE YOU A READING MAN."

The December number of the *Dental Cosmos* and *Dental Register* each present a paper read before the Massachusetts Dental Society—published as original matter in both—under the above caption, by L. D. Shepard, D. D. S., of Salem, Massachusetts. The matter of much of the article cannot be objected to, but that portion to which we take exception, and most decidedly dissent with, is the following quotation:

"A moment ago I spoke of the necessity of familiarity with the old text-books and the recent publications of the profession. Of course you all understand by the latter I refer to the dental magazines—you know what they are, their standing, and the style of their articles. I desire to plead earnestly for their more extensive circulation. Foremost stand the Dental Cosmos and Register of the West—both able magazines and worthy of our patronage. From month to month I welcome their familiar faces. I take others, but regard these as best adapted for general circulation. There are a number of publications issued as a means of adver-

tising certain institutions, patents and manufactories, which have for the most part a gratuitous circulation. Some of these contain matter of interest and value, but for obvious reasons need no plea of mine."

Now what these reasons are, that are so obvious to Dr. Shepard, we are at a loss to know, particularly as he says that "some of these contain matter of interest and value." Why a gentleman, who is writing a paper intended ostensibly to encourage professional reading, should ignore entirely, except to attempt to cast a slur upon four out of the six dental journals published in the United States, is beyond our conception; but we shrewdly suspect that one cause of this treatment is due to the fact that all publishers of dental magazines did not furnish to this modern Diogenes the information as to their private business that he desired. For instance, one of the editors of this journal received from Dr. Shepard a letter, from which we extract: "In my investigations, I have discovered that the great majority of the profession do not take any magazine. I am preparing an article to read before the Massachusetts Dental Society on this subject. As I desire to be thoroughly informed on my subject, I addressed a note to Dr. ____, and obtained from him a list (confidential) of the subscribers to the ---- in New England. I would like the same information in regard to the TIMES, provided you see fit to so far let me into the publishing department. My article will be general in its influence as far as the different publications are concerned, and its only object to induce our members to read more generally the periodical literature of the profession. In order to make my appeal more direct and forcible, it is of great advantage to know how many men do not take any magazine. If you give me your list of subscribers, will you also give the number of gratuitous copies distributed in New England."

As the publishers of this journal could not see the advantage that the profession would-derive from this information, they withheld the desired knowledge, which was doubtless the cause why the Dental Times was not of the "elect." But let us examine this exceptional statement still further. He says: "There are a number of publications issued as a means of advertising certain institutions, patents and manufactories." If we were to write this sentence as in our judgment it should be written, it would read: There are a number of publications issued by certain institutions, inventors, and proprietors of manufactories. And this is a truth which none can gainsay; and why is this? Why is it that five journals out of the six published in this country are published under just such circumstances? The reason is obvious when we recall how many that have been established, have perished, and that not a single journal remunerates the publisher—the most of them costing largely over what is received from subscriptions, and this is the cause why publishers must

make use, of journals as advertising mediums, else they cannot be supported. But, we ask, what objections can be urged to the issue of dental magazines by institutions, inventors, or manufacturers? We admit that these journals may do harm by excluding from their reading columns matter which might advantageously be published, but which would conflict with private interests; but does this occur? We believe it does not, and while there are some who may exclude from their advertising pages rival manufacturers, yet all, we believe, publish communications without regard to private interests. How can the gentleman expect dental journals to be supported by other than—what he would infer as unworthy—influences, when he states that only one in five in New England subscribe to a dental journal, and that, too, in a section of country noted for its general intelligence and information? There are two causes why dental journals are not supported, both of which are anything but creditable to the dental profession. First. But few contribute their dental knowledge; and matter of the right kind is not always attainable, unless large editorial corps are attached. Second. The majority are not regular subscribers. Take the case of the gentleman who writes so glibly of dental journals and duties of the profession, what has he contributed? We find, on examining the back volumes of the two journals that he states that he welcomes each month, for the past six years, that the gentleman's name occurs but to two articles, both of which, however, are the reports of the business (not discussions) of the Connecticut Valley Dental Association. One dental journal appeared, quite recently, containing only one original article of four pages, thirty-eight of selections, and three of editorial matter.

Our object in this communication is, however, not so much to take issue with Dr. L. D. Shepard, as it is to urge our readers, if any there be, who desire to emancipate dental journalism from the influence of institutions, inventors and manufacturers, to encourage dental literature by contributions and subscriptions, so that it will be a remunerative and profitable occupation. When that day arrives, private will never obstruct the public interest; but until that time comes, let us rather strive to build up and strengthen our dental literature, instead of making invidious distinctions, and greeting, as unworthy, all who do not come up to what we may consider as the true standard. Let us ask not who publishes the journal, but rather what does it present in the matter of mental pabulum, are its columns free, and is it devoted to the interests of the profession! If these can be answered affirmatively, we have nought to fear.

PHILADELPHIA. G. T. D.

Norz.—Since this article has been put in type we have discovered in a recent journal an original article by the gentleman.

THE DENTAL JOURNALS.

The Dental Quarterly for December, edited by Drs. A. Tees and F. N. Johnson, and published by the enterprising firm of Messrs. Johnson & Lund, Philadelphia, comes to hand and presents for its readers much valuable material; the editorial of Dr. Ambler Tees, on "The Nerve Broach," being a particularly instructive and well-digested article, giving proof of careful study, and correct theory and practice. There is one feature in this number to which we might, as an impartial critic, objectnot, however, more common with this journal than with others-it is the devotion of a large space to the republication of articles from other dental journals. This practice, common among the dental periodicals, is adopted, to a limited extent, among other professions, and its tendency, we contend, is to limit the general reading of all the dental journals, for the dentist very properly says, why should I pay for a number of periodicals when they all publish the same matter? This, however, is not always the fault of the editors, for some authors, desiring to give their effusions extended circulation, send the same article for publication as original matter, to appear simultaneously in different periodicals.

We are happy to see that our friends, Johnson & Lund, have received the prize medal at the World's Fair in Prussia, 1865, for excellence in the manufacture of artificial teeth; we believe they fully deserved it.

The Dental Register—no longer of "the West"—for December is at hand, laden with more than ordinary valuable original contributions. We should judge that though this journal arrives thus freighted, at a time when the year is just expiring, no signs of death and decay are present in it; but rather, like the old wood-fire that we love to look upon, for a time no light presenting, yet suddenly bursting forth in brilliancy and beauty, reflecting light and shadow on all that are near, so this journal gives evidence that our Western friends have had a "revival" in their midst, and we anticipate rich returns the coming year. We are happy to welcome our old friend, Dr. George Watt, back to the editorial chair, and above all are pleased that he has commenced a series of articles on Dental Materia Medica, a subject which, above all others, we feel, both as a teacher and a practitioner, an interest in.

The Dental Cosmos and Dental Examiner, each come to hand laden, month after month, with instructive, valuable and priceless information. Then with the new year let us one and all renew our subscriptions, and inwardly breathe the wish for success, long life, and continued usefulness to the dental journals, for upon them, as exponents of the advancement of the science of dental surgery, depends, to a great degree, the status of the dental profession, and its members as educated and intelligent practitioners.

G. T. B.

CONTRIBUTIONS TO THE MUSEUM.

Our valued friend, C. C. Williams, M. D., D. D. S., having recently returned from a somewhat extended trip to the Pacific coast, has presented to us a valuable memorial of his visit to the Sandwich Islands—a cranium of one of the natives, with a perfect and regular denture. While walking on the beach of the Island of Ohua he discovered it two-thirds buried in the sand, the part exposed, (the right parietal bone,) being bleached to a pearly whiteness. With his own hands he removed it from the sand, and found that the cavity of the cranium was filled with the bones of a child. The natives of the island were exceedingly opposed to his taking it away, and offered him a valuable consideration to leave it with them, as they wished to retain it as a charm against the Evil One. Our friends are respectfully invited to examine it, as it is well worthy of special study.

We are happy to inform the numerous friends of Dr. W. that his visit to the Pacific, in the search of health and strength, was to a good degree successful, and hope soon to hear that he has resumed his professional duties, that he has for so many years prosecuted with credit to himself and honor to the dental profession.

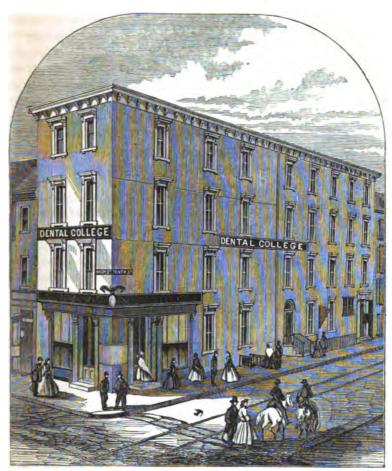
From Wash. L. Atlee, M. D., we have received a horn, about two inches in length and seven-eighths of an inch in diameter, removed by him from the face, below the right eye, of a gentleman eighty-eight years of age, a resident of this city; also a tooth, removed from an aged lady whose teeth had apparently been absent for many years; the peculiarity of the tooth consisted in the difficulty of diagnosis, which puzzled her medical and dental advisers. A swelling of a hard and dense character presented on the labial surface of the inferior maxillary, and was pronounced to be an exostosed tumor. The case coming subsequently into the hands of Dr. A., he determined it, by a careful examination, to be a bicuspid tooth that had never crupted, lying horizontally at the base of the alveolar process. He removed it with but little difficulty.

From Mr. Milton Keim we have received an interesting and rare specimen of a small sea animal, caught by him on the coast of New Jersey. Its name is "Equina Mare," and it presents, to all appearances, the miniature head of a horse, with the tail of a fish.

As custodians of these contributions for the museum of the Pennsylvania College of Dental Surgery, we publicly return our thanks to the donors.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE TENTH ANNUAL SESSION. 1865-'66.



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DEMONSTRATOR OF MECHANICAL DENTISTRY.

The Lectures to the Regular Course commence on the let of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course (Demonstrators' Ticket included,) - \$100

Matriculation (paid but once,) - - - 5

Diploma Fee, - - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Tenth Annual Session, 1865-'66.

The tenth annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

COURSE OF LECTURES.

CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can be performed before the class.

DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration.

At the Clinic the incumbent of this chair will also demonstrate before
the class the various operations described in his course of lectures.

MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alleying of gold, together with the alleys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch or the art, will in place receive due attention and investigation.

PRINCIPLES OF DENTAL SURGERY AND THERAPEUTIOS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissecting-

room in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this CoRege; five years' practice, inclusive of the term of pupilage, will also be considered equivalent to the first course of lectures. If the candidate has been in continued practice since 1852, he is eligible for graduation without attendance on lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or prectice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them. shall receive the degree of Doctor of Dental Surgery.

TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

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THE DETERIORATION OF VULCANIZERS.

BY W. H. TRUEMAN, D. D. S.

The fact that vulcanizers in constant use rapidly lose their strength is, to the thoughtful mind, beyond dispute; and as it is an imstrument now so generally used by dentists, a few remarks upon this topic, the result of observation and experiment, may not be without interest. Many articles upon the power of steam, and the strength of materials, have appeared in the various journals, and any dentist must be inexcusable indeed who is ignorant of the requirements a vulcanizer must possess to render it what Although so much has been said upon the selection we consider safe. and choice of material, and the care to be used in manufacture to make them strong, the means to keep them so seems to have received but little Those agencies so silently, yet industriously at work to transform that harmless and useful companion of our laboratory into an uncontrolable, destructive monster, have either failed to attract attention, or have been deemed almost unworthy of notice.

The first, and perhaps the most important cause of their gradual destruction, is found in the gasses evolved during the process of vulcanizing, which appears to have, comparatively, a powerful action upon copper, of which metal most of our vulcanizers are made. The intensity of its action is not generally observed, on account of the small quantity generated finding its way into the chamber of the vulcanizer, the greater portion being arrested by the plaster of the mould, but enough escapes to produce a marked effect.

I suppose but few have failed to notice the discoloration of the water, and the dark deposit upon the flanks and the sides of the vulcanizer. This deposit in the vulcanizer of slovenly dentists, will be found to form quite a thick coating, composed for the most part of sulphuret of copper, formed at the expense of the copper of the vulcanizer. This action, (the formation of sulphuret of copper,) takes place every time the vulcanizer is used, and it remains a question to be answered, by mathematical calculation, how long a vulcanizer can be used with safety. I anticipate,

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unless means are taken to prevent it, hearing of numerous accidents, when sufficient time has elapsed to render this action manifest. From experiment, it appears that the gasses are not given off until considerable heat has been applied, and they, being in the nascent state, we have every condition favorable to chemical combination, and the strong affinity between sulphur and copper leaves no room for doubt as to the action which takes place. In using tin to form the air chamber of vulcanite cases, my attention was called to the perfect manner in which that metal resisted the action of these gasses, being but little, if any, inferior to platina or gold, and much superior to any other metal I have tried in a large number of experiments bearing upon this point.

Some time ago I procured one of Howel's packers, and, after using it a short time, threw it aside on account of the unsightly appearance the work produced by it presented; the surface being covered with numerous black streaks and spots. A few months ago I tinned the lower part of the inside of the barrel and the bottom of the piston; the difficulty is entirely removed, the work coming out as clear as though packed by hand, and were it not for the miserable material, and poor workmanship displayed in its construction, should consider it an invaluable assistant. By what I have observed in this and numerous other experiments, I think that by giving the internal surface of the vulcanizer a heavy coating of pure tin, this action could be almost completely resisted, and if the flasks were also coated with it, the annoyance all have experienced, of having their hands so badly soiled, would be in a great measure avoided, and the durability of both flasks and vulcanizer much increased.

The relative action upon tin and copper of the sulphur gasses evolved in vulcanizing, may be readily demonstrated by the simple experiment of placing the polished surface of a piece of tin and a piece of copper in contact with rubber in vulcanizing; while the copper would be very much roughened, the tin would be only slightly discolored.

By means of chloride of zinc, or chloride of ammonia, the bright clean surface of a new vulcanizer could be readily tinned at a very slight expense, and if the manufacturer of them would attend to it, the utility of the instruments would be much increased.

With one that has been in use the process would be more tedious, on account of the difficulty of making the surface of the copper clean enough to ensure a perfect coating; if any imperfection was left, it would, in all probability, render the apparatus weaker and more dangerous than at first, as all the action would be developed in one spot. The constant and often-repeated strain to which vulcanizers are subjected, would be very likely to prove injurious to a weak instrument, and the practice of some, to raise the heat as quickly as possible, by causing the force to be exerted

suddenly, would develope any existing flaw, if it would not create defects, and thus pave the way to disaster. Forty-five minutes or an hour is time little enough to reach the vulcanizing point with safety.

The practice of filling the vulcanizer with hot or boiling water, although it saves much time, is a dangerous one. When the head is placed upon it, the bulb of the thermometer is brought into almost immediate contact with the boiling water, and the sudden elevation of temperature is liable to cause defects in it, which become developed in vulcanizing, and make it register ten, twenty, or thirty degrees below the actual heat, and the astonished operator might have the exquisite delight of seeing his vulcanizer take an ill-directed ærial flight before he was aware of it. Such defects in thermometers I have, on several occasions, noticed from the above cause. Sudden changes of temperature, either in heating up or cooling off after vulcanizing, should be avoided. The old time-honored proverb of "more haste less speed," applies with much force in this connection. By careful attention to their management, the lives alike of the vulcanizer, and those who operate with them, may be rendered more secure. In fact, there is no operation in dentistry, however simple, in which carelessness is admissable, as many have found to their cost.

DENTAL EDUCATION. BY T. L. BUCKINGHAM, D. D. S.

In the April number of 1865, of the DENTAL TIMES, I published an article on dental education. As a basis for the article, I made an extract from the London Dental Review, in which the writer, in noticing the dental colleges in this country, remarked that he feared, "that the number of those institutions tends to thwart the very object for which they were established, and that, in consequence, the standard of professional education is tending downwards rather than upwards." In order to show that the tendency would in all probability be downwards where the colleges were located close together, I referred to the effects on each other of the two principal medical colleges of this city, which had, up to that time, been held up as examples to show the necessity of another dental school. I showed, by facts which have not been contradicted, that the oldest medical institution in this country, with a reputation almost as extensive as the medical profession, and an invested fund sufficient to support it without requiring any fees from the students, if this had been necessary. had lowered its standard by shortening the sessions and reducing the fees. and no other reason could be given for so doing but that another similar institution was in operation in close proximity, whose sessions were shorter and fees lower. I have not heard of these colleges being referred to as reasons for more dental schools since the paper was published.

My article was replied to by Dr. J. E. Garretson, in the *Dental Cosmos*, and although I think he failed to answer my arguments, still there was an open manliness about his article that commands respect.

In the January number of the Cosmos, another article on the same subject, by one of the editors, was published; but, instead of publishing it under his own name, he sent it as a communication to the Merrimack Valley Dental Association, which met at Concord, N. H., on the preceding 2d of November, thereby making it part of their proceedings, and then publishing it as such, so as to shift the responsibility in a measure from himself to them. This is characteristic of the author; for, in all his writings, he has never stood up and fairly met statements which he did not agree with, but, in some short sentences, he would put in an offensive remark, that was intended to irritate rather than refute anything that had been said on the subject.

But let us examine some of the statements in the article and see if the author has not misrepresented some transactions of another institution of which he was once a member, and it is to correct these errors that I have noticed his article at all. For I presume it was intended more as an advertisement than for any other purpose, as he commenced by saying, "the subject is suggested to my mind by the fact that the period has again arrived for the opening of the dental colleges: and if, as has been reiterated on different occasions in our magazines, dental education is tending downwards rather than upwards, it becomes a matter of grave moment to the student who has at heart his own interest and those of the profession of which he desires to become an honored member, that he should be exceedingly careful in selecting the source whence he shall derive his professional education." The writer devotes a considerable portion of his article to show that dental education, in the profession at large, is tending upwards, which has never been disputed, and he attributes this advancement partly to the teachers of the colleges who have taken part in the Associations, and contributed to the literature of the profession. But he says, "owing to the small number of students heretofore in attendance at the colleges, the influence of the faculties in this direction in dental education, has been exceedingly limited," and he might have said that, with even this small number, their education had been better than it would have been had they remained in private offices, for the only question that has been raised is, is the curriculum in the colleges progressing? But this question is carefully avoided. After giving some general reasons why he thinks the standard of dental education is tending upward, he writes this sentence about himself: "Well do I remember the feelings of distrust with which ten years ago, having declined in preceding years the position, I entered upon the discharge of such duties,

deeply conscious of my own deficiencies, and fully recognizing those of my colleagues." This sentence would not be worth noticing, but as he has reiterated the same statement on several occasions, it would be a satisfaction to some of us to know when he was called to a position in a college before the time he accepted. I have no knowledge of a position being tendered to him in either the old Philadelphia or Pennsylvania Dental Colleges, and as I have been a member of their faculties since they were first organized, I think, if the position had been tendered, I would have heard of it.

But he is also not very particular about dates, for he says he entered upon the discharge of the duties ten years ago. Now the article under consideration was read on the 2d of November, 1865, and the first course of lectures in which he took part commenced on the first Monday in November, 1857, just eight years before; and in the same sentence he writes that he was "deeply conscious of my own deficiences, and fully recognizing those of my colleagues." Well, even at that time, it appears he had as good an opinion of himself as he had of his associates.

Passing from these trifling matters, we come to a more serious sentence in his article, for in it he endeavors to injure another institution. After giving some reasons why he thinks the instructions now given are more thorough than formerly, he writes, "In addition to this, I feel satisfied that the standard of requirements for graduation on the part of all our institutions is of decidedly a higher order than used to prevail, and should be exceedingly sorry to think otherwise, for it certainly was low enough at a time when a sense of duty prompted me, as an individual member of a faculty, to protest to the Board of Trustees against the laxity which existed in that particular," and in order that the readers might not be mistaken in the institution, he adds, "this, however, was in another institution than that with which I now have the honor to be connected." Now the fact is, he never did protest to the Board of Trustees against the laxity of the examinations. In one case, after the ballot had been taken, and the candidate had been passed by the Faculty, and he, with the rest of the Faculty, had signed a recommendation to the Trustees to graduate the student, he went home and wrote a protest to the Trustees, requesting them to withhold the diploma, but the Board took no notice of the protest. That he ever protested against the general laxity of the examinations to either the Faculty or the Board of Trustees is not so. If there had been no personal feelings in this case, my impression is there would have been no protest, for the candidate stood higher with the other members of the Faculty than some others in the class.

Let us examine the next sontence, and see how generous he is in regard to the experiences of the past, and how forgetful of some more recent

transactions. "Like some other experiences of the past, which I have been disposed to permit to sink into oblivion, rather than bring them under the notice of my fellow-practitioners. I should have made no reference to this, but for the assertion that of late students have been guaranteed their diplomas before matriculating, and then graduated upon two months' instruction. That such things may have been done is possible. I sincerely believe, however, that such charges cannot justly be brought against any dental institution."

Probably if some of these experiences were told they would explain some others, which, being half told, convey very erroneous impressions; but as I do not know exactly what he alludes to, I can only advise him to tell all—he had better out with it at once, than be weighed down all his life in keeping secret some grave offence. Now let us see if we can enlighten him on some parts of the above sentence, as he appears to be so exceedingly oblivious.

Did not the *Dean* of the institution of which he is an honored member, matriculate a student from Massachusetts, between Christmas and New Year's day, the first session the college was in operation, and graduate him on the 1st of March following? This is a plain question and easily answered, for their class was not very large. The dates we have definitely fixed, for the student had made application to the other college and was refused, and the published reports show that he did graduate at the time mentioned.

This is the case alluded to in my previous article; others might be pointed out, but as the dates are not so well fixed, I have not thought proper to mention them. And thus, following up this same paragraph, we have a modification of the previous sentence; for it is stated, "It is true that practitioners, who have been diligent students for years, and thus, by close application to their books, have made themselves as thoroughly acquainted with the various departments of science as they were skillful operators, have, after an attendance upon lectures for a few months, come forward as candidates for graduation, and passed the ordeal with the highest honors." Now I do not know that I have any more right than any one else to object to a Faculty adopting any course of instruction or term of practice as equivalent to the instruction they please, but when they publish in their announcement that it requires "five years' practice, inclusive of pupilage," to be equivalent to the first course, and the second course must be attended in the institution, and then take students on less than two months and graduate them, they can hardly say the standard of dental education, at least in that of attendance. is raising, and the profession scarcely knows what the requirements are, as these students are classed and ranked with the regular matriculants,

and march up and graduate in the same manner, their names being published in the same list with regular graduates, so that it is impossible to separate them unless you are personally acquainted with them. What we ask is, to let the profession know what is being done, and then leave it to them to judge whether the tendency is upwards or downward—do not publish one thing and practice another.

There is one other sentence in this paragraph that I want to notice and then I shall be nearly done. "The influence upon dental education is far more salutary when such men come forward and submit to an examination on the part of a competent and reliable faculty, who shall decide upon their right to possess a diploma, than when the so-called honorary diplomas are distributed, ad libitum, upon gentlemen who, however worthy as men and practitioners, have neither attended lectures, submitted to an examination, nor distinguished themselves in any way as contributors to the science and art of the profession," and then he attempts to apologize for parts of this by saying, "There may have been a period when such practices were, to a certain degree, admissible, but that has passed away." The only time when such a charge could be brought against the dental colleges in this city was at the close of the first session of the oldest college, and then I must admit they were distributed rather liberally. The gentleman himself received one, which I suppose he still honors, as he continues to use the D. D. S.; I am not aware that he received in from any other source. But as diffusively as they were given at that time or since, the names of all the recipients have been published in either the Dental News Letter or Dental Cosmos, except three in the old school, which the Trustees persisted in giving in opposition to the Faculty, and three in the Pennsylvania College, two of which the gentleman himself assisted in recommending, and the other fills the place he occupied in the college.

The last that I shall notice is, "To say that the increase of schools by inducing competition tends to degrade education indicates, if not an entire ignorance of the subject, at least narrow and contracted views of it." And then he refers to the Grecian Republic, England, France, Germany and the North-eastern States, to show that the education of the inhabitants of those countries must be attributed to the numerous universities, colleges and schools which had been established in them.

Who has doubted this, or attempted to question the necessity of more than one school? I advocated, in my first article on this subject, several schools in various parts of the country, and stated that they would strengthen each other. But was it to advance dental education, that parties who could not rule the school they were in, established another? Can one single instance be pointed out where two schools, depending on

the students' fees for support, have been established in close proximity to each other, where they have not re-acted upon each other, and the standard has been reduced in one or both? Now this is the point I started upon, and this question has not, nor cannot be answered but by admitting that such has been so, and must continue to be so.

DENTAL SURGERY—SHOULD FEMALES PRACTICE IT? BY GEO. T. BARKEB, D. D. S.

Before considering the latter portion of the title of this paper, I propose briefly to call attention to certain requirements which I consider imperatively necessary for persons to possess to enable them to successfully practice dental surgery. The two most prominent requisitions, which in my judgment are the most important, are that the person about to enter the profession should possess a mental and physical constitution of a high order; if he be deficient in either he is unfitted for dental practice, and should be advised to abandon it. The practice of dentistry is calculated to undermine the very best balanced constitutions, which is attested by undeniable facts, and which can be explained on truly physiological principles. The cause of this is due to the double demand which is made simultaneously both upon the mental and physical powers. Let us, for example, take the ordinary routine of daily practice: two or three cases of exposed pulp, or obscure toothache present, difficult cavities to excavate and prepare for filling, treating periostitis or alveolar abscess, successfully welding piece after piece of gold to its proper situation, the application of strong hand pressure, until, perhaps, the very hands are blistered, with the necessity of taking frequent positions which interfere with respiration, circulation and digestion; when this work is gone through with day after day, is it surprising that dentists do not enjoy good health and long life?

Let me ask any one whose labor is strictly physical, or purely mental, and I believe that either would state that their task is easy, or burden light in comparison with the practitioner of dentistry. It is a law of nature that if we make mental exertion the blood is directed, in increased quantity, to the brain; so, also, if we make physical effort the blood is diverted to the extremities and the surface of the body. If an author desires to write a book, he selects some place where all is quiet about him, he sits in his study and engages in nothing but mental labor, and yet on every side this is admitted to be exhausting and, if long continued, the health is destroyed. The artizan or laborer who puts forth only animal strength whistles or sings at his work, as it is with him but a mechanical operation; his mind is not studying the every movement of his fingers, but they continue in their work requiring but an occasional thought or exami-

nation. This I have repeatedly remarked when watching jewelers, watchmakers, engravers, shoemakers, and indeed I might add all mechanics and laborers in the field. I would not be understood as giving forth the idea that these occupations do not require close study to reach perfection. But what I desire to state is this, that a man may plough a field well, and yet not devote much thought to the very occupation, but his mind may be engaged in other and more congenial fields of thought, and this very occupation of mind acts as a restorative to the physical energies. In dentistry, as previously remarked, the demands are made upon the mind and strength at one and the same time. The simplest operation in operative dentistry is not mechanical, for it must always be performed differently and under unlike circumstances, and demands the active use of the mind and strength; this double call upon the blood for vital force and energy, often leaves us, when a long and protracted operation, in a tedious position, has been gone through with, weak, tired and spiritless, in other words, utterly exhausted. This feeling I have frequently experienced, and am one who has enjoyed through life more than ordinary good health, never having been ill, except slightly, until I had been seven years a dentist. Let any one who visits our Conventions, or Association meetings, remark how few old practitioners, say of twenty-five or thirty years' practice, are present; and if there are, how many of them complain of loss of eyesight, or dyspepsia and indigestion. The cause of this in my mind is plain; after eating, the stomach being distended with food, nature requires that there should be a period of repose from mental and physical labor, the blood vessels and capillaries in the region of the stomach become engorged with blood; the gastric juice is from this blood secreted, and, if normal in quantity and quality, preparation of the food in the stomach for the continuation of the digestive process takes place. But, on the other hand, the dentist no sooner partakes of his breakfast than a call is made which requires immediate attention; he obeys that call, as it is one of suffering, it takes longer than he expects, and others crowd in upon him until he is fairly launched into the day's practice. Now let me ask what opportunity has the stomach been allowed for the performance of its duty? None. The blood has been directed to the brain and the surface, and the demands of nature have not been met; for years, perhaps, no thought is taken of the matter, but ere long these outraged laws are found to have entailed a penalty, and dyspepsia, with its long train of evils and disagreeable sensations, presents itself. Aware of this, I have, fas ar as in my power lay, endeavored to persuade the gentlemen who have been present at my lectures to adopt the plan of eating but two meals daily, taking in the middle of the day a light nutritious lunch, the last hearty meal being enjoyed after the close of the labors of the day, when

it can be followed by a sufficient season of mental and physical repose. I know there are some who will keep a patient in agony while they enjoy a rest after each meal, but the practice is an evidence of heartlessness and want of feeling on the part of the practitioner to the patient, and is so understood by the latter. It may be urged by some that a certain number of hours each day should be devoted to out of door exercise; this I grant, but who can obtain it? The one whose practice is not extensive does not need it, and he must needs stay at home to receive and extend his practice, it being a universal rule that the largest fish usually come to the net when there is no one to catch them, and it is only the patient, never-wearying fisherman that derives the advantages of the smallest nibbles which usually come from the largest fish. To succeed in dentistry a practitioner must be always at hand, with services ever ready at the command of the public. The dentist, on the other hand, whose practice is extensive, even with the greatest caution, cannot leave time enough for pleasure and recreation, as so many cases present themselves which require immediate attention. I have been repeatedly urged by patients, to whom those views have been stated, to join some base ball club, or spend a certain number of hours riding on horseback or boating, but always ask for a plain answer to the following question, viz: would you, if you were suffering and needed dental attention, consider that I was, or was not neglecting my practice, if you asked for me at my office and was told I was playing base ball? They have invariably answered in the affirmative. I do not state that this would be a just conclusion, but, nevertheless, it is a natural one.

But to the latter portion of this essay. Should females be encouraged to enter the dental profession? I contend they should not, and it is with no disrespect that the assertion is made. The same reason holds good against females practicing dentistry that it does against a feeble male, for the reasons as previously stated. The very form and structure of woman unfit her for its duties. Again, I contend that its performance would, under certain circumstances, be attended with great danger. One of these circumstances may be cited; as, for instance, in pregnancy-Who would encourage a female to perform a trying and difficult operation at such a time, and must not a woman neglect her family for the performance of dental practice? Have we not, as dentists, sufficient evidence of the great injury that mothers are inflicting on their offspring by not furnishing them with nutritious breast milk, but, on the contrary, bringing them up by "hand:" the child, as a consequence, being deprived of the phosphates and carbonates of lime, magnesia, &c., grows with teeth carious and defective in structure. That the spliere of woman's usefulness should be extended I, for one, justly urge; that she is now debarred

from entering many occupations for which she is fitted, I allow; but to me it seems dentistry is not one of the class of occupations for which she is fitted physically, though she is mentally, and it is with regret that the statement is made; for were we only to have some of the mental energy of women infused in our profession, it would stimulate some of its members doubtless to increased activity, particulary in the science of dentistry. It may be urged by some that woman is capable of great physical exertion, and I may be instanced to the German women, who work in the field, or the Indian squaw, who performs the out-door labor while her husband peacefully reposes. This is admitted as an argument of what women can do; but I would answer, that from such classes, and from such occupations, mental culture of a high order cannot be expected. I will admit that women can, by cultivation, develope either the mental or physical energies to a degree equal to man; but that she was, by an allwise Providence, fitted or designed for great physical labor I deny, or, for what is more trying, a development to a great degree of both simultaneously.

My views on this subject have been called forth by the election to membership of females in some of our Western Dental Associations, and by the views promulgated by certain prominent practitioners and writers. Impressed with the truth of this position, I propose to offer an amendment to the Constitution of the American Dental Association, at its next meeting in Boston, to allow none but males to be eligible as delegates from local Societies.

TENTH ANNUAL COMMENCEMENT OF THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Tenth Annual Commencement of this Institution was held on the evening of March 1st, 1866. The evening being propitious, an unusually large and appreciative audience was present to witness the interesting ceremonies that close the course of instruction; an encouraging evidence that the public are beginning to appreciate fully the necessity of thorough education in this important branch of scientific attainment.

It will be seen, by reference to the following list, that the numbers of the class, and the graduates, far exceed those of previous years; this is gratifying, inasmuch as it evidences an increasing determination on the part of the profession toward a higher standard of qualification for admission to its ranks. When we remember that the class is composed of persons who represent very many sections of the country, in connection with the fact that all our dental colleges have had, the past winter, largely increased numbers, is abundant and gratifying proof that the time is fast approaching, if it has not already arrived, when the diploma of a dental

college will be considered essential to professional character and reputation.

The order of exercises consisted of music by the Germania Orchestra, prayer by the Rev. Dr. Bomberger, conferring the degrees, and the valedictory address by Dr. James Truman, Professor of Dental Physiology and Operative Dentistry.

The Degree of Doctor of Dental Surgery was conferred upon the following named gentlemen by Henry C. Carey, President of the Board of Trustees.

GRADUATES, 1865-'66.

John P. Adams,.....New York,..Salivary Deposits. George K. Bagby,.....Virginia,...Nitrous Oxide. Henry Berhard, New York, .. Causes of Caries. Thomas H. Bradfield, .. New Jersey, Inflammation. Francis A. Brewer, ... Missouri, ... Dentistry a Science. Samuel C. Britton, Maryland, .Predisposing Causes of Caries. Charles Buffett,......Ohio,.....Arsenic. Perley M. Christie,....Penn'a,....Inflammation. William H. Crary,....New York,..Rubber versus Metal. Edward S. Davenport,... " Francisco Dominguez,...Cuba,..... Inflammation. Eugene C. Flamand,... "The Art of Filling Teeth. Hamilton Forrest,.....Maryland,..Decay of the Teeth and Treatment. Albert Hape,.....Georgia,...Dentistry a Science. John A. Hauser, Penn'a, Treatment of Exposed Pulp. Milton Keim,......Michigan,..Artificial Dentures. Wash. K. Lineaweaver, .Penn'a, ... Inflammation. Francisco Mignotte,....Cuba,..... Extracting Teeth. James W. Nelson,....Tennessee,..Indigestion as a Cause of Caries. Henry S. Noble, New York, .. Antrum Highmorianum. Francis A. Ramsay,....Penn'a,....Sensitive Dentine. Henry C. Register, ... Maryland, .. Digestion. Louis Jose Salicrup,...Porto Rico, Extraction of Teeth. William Smedley,.....Penn'a,....The Fifth Pair of Nerves. Henry J. Smith,..... " Sensitive Dentine. James S. Thomas,.....New York,..Chemistry. William H. Trueman, .. Penn'a, Materials for Filling Teeth. Agustin de Varone,....Cuba,.....Development of the Teeth. Julien J. Vanderford, .. Maryland, .. Dentistry. John H. Vedder, New York, .. Treatment of Irregularities. " .. Diagnosis. Ransom Walker,

William C. Wardlaw, . S. Carolina, Anæsthesia in Dentistry.

John B. Wheeler, New York,.. The Dental Pulp.

A. Lawrence,	Mass.)
J. M. Barrett,	. Penn'a.	In practice since 1852.
W. G. A. Bonwill,	. Delaware.)

MATRICULANTS—TENTH ANNUAL SESSION, 1865-'66.

J. P. Adams, New York.
Stephen Armas,Cuba.
G. K. Bagby,Virginia.
J. M. Barrett, Penn'a.
Edward Bedloe, "
Henry Berhard,New York.
E. M. Beesley,N. J.
T. H. Bradfield, "
W. G. A. Bonwill, Delaware.
F. A. Brewer, Missouri.
Samuel C. Britton, Maryland.
Charles Buffett,Ohio.
P. M. Christie, Penn'a.
R. L. Cochran, Iowa.
Wm. H. Crary,New York.
Frank Darby "
S. C. Dayan,
Edw. S. Davenport, "
Timateo P. Dias,Cuba.
Francisco Dominguez, "
E. C. Flamand, "
Hamilton Forest,Maryland.
Simon Frau, D. D. S.,Cuba.
Rafael Gonzales, Spain.
Asher B. Greasemer, Penn'a.
Albert Hape,Georgia.
L. B. Henderson, N. C.
J. A. Hauser,Penn'a,
Milton Keim, Michigan.
A. Lawrance,Mass.
W. K. Lineaweaver, Penn'a.
Thomas F. McClure, "
Daniel Martin, "
Mariam Martorell,Porto Rico.
Francisco Mignotte,Cuba.
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in the state of th
H. W. More,Penn'a.
J. W. Nelson,Tennessee.
Henry S. Noble, New York.
W. Pellett,Illinois.
Casimer del Portillo,Cuba.
W. B. Race, New York.
F. A. Ramsay,Penn'a.
H. C. Register, Maryland.
John E. Register, "
Louis Jose Salicrup,Porto Rico.
Peter Schembs,Penn'a.
W. Smedley, "
H. J. Smith,
C. W. Strang,New York.
James Tait,Penn'a.
Henry F. Tefft, Maine.
James S. Thomas,New York.
Isadore Tolon,Cuba.
John R. Thompson, S. Carolina.
A. P. Tompkins, Penn'a.
Wm. H. Trueman, do
J. J. Vanderford, Maryland.
Agustin de Varone,Cuba.
John H. Vedder,New York.
Francis Vega,Porto Rico.
Erastus Walker, New York.
Ransom Walker, "
W. H. Walker, Wisconsin.
Wm. C. Wardlaw,S. Carolina.
J. B. Wheeler, New York.
O. N. Whitney,Illinois.
Wm. Williamson,Penn'a.
E. Wilson, New York.
J. H. Winslow,
1

The Demonstrators report the following operations performed in their departments during the past session.

DEMONSTRATOR'S REPORT, SESSION OF 1865-'66.

OPERATIVE DEPARTMENT.

Number of 1	Patients visiting the Clinic,	2480		
	whom the following operations were performed,			
	8,	671		
-		562		
	al,	25		
	ng,	28		
	***************************************	18		
Treatment a	nd Filling Pulp Cavities,	180		
	aries Removed,	20		
	Salivary Calculi,	64		
Treatment of	Periostitis,	18		
66	Alveolar Abscess,	28		
66	Inflammation of the Gums,	11		
66	Partial Necrosis,	8		
66	Irregularities,	20		
Pivot Teeth	Inserted,	2		
Extraction of	f Teeth and Roots,	2107		
Total	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3759		
EDWIN T. DARRY. Demonstrator.				

EDWIN T. DARBY, Demonstrator.

MECHANICAL DEPARTMENT.

154 Patients were supplied with the following Artificial Dentures:	
Whole Sets of Teeth,	43
Full Upper Sets,	5 0
Full Lower Sets,	3
Full Upper Set, on Porcelain Base,	1
" Block,	1
" Continuous Gum,	1
· · · · · · · · · · · · · · · · · · ·	47
Partial Lower Sets,	7
Obturator,*	1
_	08
" " Hard Rubber Base	94.
Whole Number of Gum Teeth,	
" Plain Teeth,	
Number of Teeth Mounted for Patients, 22	12
# Made for a soldier having last his teath and some of the adjacent hones from a group that work	-4

		Depositin	g Sets.					
18 Full Upper Sets,	on Hard	Rubber	Base,	No. of	Teetl	1,	252	
2 Partial Sets,	46	60	ſ	**	"		13	
1 Full Upper Set, C	ontinuous	Gum,		66	"	••••	14	
16 Full Upper Sets,	on Metal	l Base,		"	"	••••	224	
-						•		503
Total Numbe	r of Teet	th Moun	ted,	• • • • •			• • • •	2735
			J. M	. BAR	row,	Demo	nstra	tor.

The arrangements for the practical demonstrations of the two branches, operative and mechanical, must be seen in full operation to be appreciated. The reports give but a faint idea of the very great value these are to the student. Private instruction is of importance and absolutely essential, but it cannot compare in thoroughness to that received under competent demonstrators, assisted by the example and influence of advanced students. The experience of those who have spent years in educating large numbers of young men for professional duties, satisfies them that the mode adopted is the best attainable to fulfill the desired end-giving the graduate of two courses all the experience that years could alone accomplish in private practice. He is not a mere novitiate, but goes forth trained to meet difficulties with that manipulative skill that must at once command the confidence and esteem of his patrons. We, therefore, do not hesitate to urge all who expect to enter private dental offices, to decide in advance to close that very important training by entering one of our many colleges. and graduate in time with honor to themselves, and with a prospective future of value to the profession.

The ceremony of conferring the degrees was followed by Dr. Truman, in the closing address, a full report of which we append.

VALEDICTORY.

The commencement of life! How profound the significance that lies concealed in that short sentence. What hopes, fears and anticipations are enshrined within its full meaning. Childhood has its dreams and its pleasures for the hour—maturity brings with it the golden pathways of a future. In middle life, the past sobers the present joys, and with its experience we look beyond to a plain highway, upon whose borders no temples are reared but those that correspond with the architecture which the travels of many a day have made us conversant with. In old age we come again to build in the future, but not the future of childhood; it is that which all ages have hoped for, all nations have cherished a belief in—one based on an eternity of experiences. It is with no common feelings that I rise to address you this evening, not you alone who are to

go forth from this hour as ministering spirits to poor humanity, who have been crowned, not with kingly gew-gaws, but with that higher decoration, a testimony to your faithful labors in your chosen field of scientific research, but to you who have come to show, by your presence, that you can mingle with us in the rejoicings, fears and solemnities of this hour; for all these are blended in the feelings of both teacher and graduate—rejoicings at the successful completion of a work earnestly labored for; fears and anxieties that the future may develope all that can be legitimately hoped for, and the solemn feeling that this hour brings with it a separation with many in which a reunion can take place no more for ever. It is to you who are not of the profession, of which I am in part the representative this evening, that I desire to say a word.

You come to cheer on the young aspirant for honors, well deserved, in the beginning of his career. Are you equally as well prepared, not only to give the good word of cheer, but also to bestow upon him that substantial evidence of it, that comes by employing his professional services when required? The time has passed when men should be countenanced who are not willing to earn the diploma that should alone be the guaranty of their ability to perform the work they profess to do. The time has passed by when the carpenter can leave his bench, and the blacksmith his anvil, and with a few weeks of instruction in the art of tooth-pulling, hang out his sign of dentist in flaring capitals. We, as a profession, require something more; you, who are the supporters of such practitioners, should have a standard of excellence nothing lower. Have the public at large taken this high ground? I regret to have to say no. The graduate of our colleges, who has, at heavy expense of time and money, qualified himself for all the branches of his profession, is met at almost every corner with just such examples, and the thoughtless public will pass him by to patronize the ex-carpenter or blacksmith. I say thoughtlessly, for few, comparatively, have any idea what is required, in knowledge and skill, to treat successfully diseased conditions of the mouth, never taking into consideration the fact that lasting injuries may result from this careless indifference on their part. Are you aware that one-half of the subsequent ill effects that follow operations, and are so glibly ascribed to colds, are the results of ill-considered or badly-performed operations? do not for a moment imagine that you do, yet such is undoubtedly the case. Now, what is the remedy? We have it here to-night before you. Let public opinion be so positive in its character, that no more will a man dare to treat the mouth, without a fitting education to qualify him, than the same individual would attempt the practice of medicine. You may say quacks abound in that profession. True, but they are exceptional cases, and have an exceptional practice. Do not misunderstand me. I do not

wish to include all that go by the name of dentist with this class; many, very many worthy and intelligent practitioners are to-day doing yeoman service in the profession, but they belong to those who have grown up with it almost from its infancy, and are fully conversant with all its requirements. But it is of those who, in this day of enlarged facilities for instruction, will attempt to perform that which can only be acquired by proper training, that I now speak, and I ask, at your hands, for those who have aimed to qualify themselves in the experiences of the past, before commencing that of the future, that they receive adequate support to encourage them in the belief that the stability of a superstructure depends, not on the top stone, but on the base upon which it is reared. It is no argument against the proposition I have laid down, that colleges turn out men unworthy to bear their honors; all this is granted. The seeds of education do not always fall on congenial soil, neither can we hope to mould the human brain, or make the human hands manipulate as we would have them. Individuals, many times, mistake their calling: a poor minister would frequently make a better carpenter, or the carpenter a better lawyer. Their must be a peculiar talent for certain things before education can be of much avail. Some accomplish more in twelve months' earnest application to study than others in twelve years; but this is no argument against proper mental training. The individual who has been twelve years is just so many times better off than in profound ignorance, though he may never become a learned man. But these are truisms, that need no argument with an intelligent audience.

I always feel like rejoicing when men step out of the ordinany walks of life, and aspire to that which requires brain work to advance the aspirant to honor. I do not mean by this that men should undertake that for which they have no peculiar abilities. The world cries aloud, the professions are full, send your sons to the shop! The professions are never full of the stamp of men that truly belong to them. A brain born into the world, qualified for a certain work, will find that work to do. When the professions cease to be objects of interest to the human intellect, that intellect may be said to be in its decadence, if it has not already lapsed into barbarism. The professions lead the civilization of the world; as they advance, the nations advance to higher intellectual attainments. I, therefore, welcome all (who feel they have something to do therein) to the profession to which I belong, and gladly would I welcome still more than the world generally concedes have a right there to be.

The recognition of the right of every human being to an equal share in the privileges that we enjoy, has not yet become a principle of faith and practice, as I think it should. We say to one-half of the human family, stitch, stitch, darn stockings, make shoes for a shilling, stand

behind counters for two or three dollars per week, do anything, but don't enter the sacred precincts that we have marked out for our peculiar benefit. Every human soul has certain qualities; those qualities should mark its pathway through life. Talent is of no sex, color or clime, but is an inheritance from the Creator, given to be fully cultivated in the direction that it leads; hence, in my judgment, any attempt to cripple the aspiration of a God-implanted intelligence is unworthy the age in which we live, and is little short of blasphemy against the Creator himself. As we keep any number of the human race in a condition lower than ourselves, just in that proportion will the degradation be a mill-stone around our necks; the reverse of the proposition is also true. advance the masses in intelligence, and the means of acquiring information and pecuniary rewards for labor, will the civilization of all be increased. Hence, as an individual, I welcome all classes to the profession of which I am a member, and should make but one requirement-do you feel that you are qualified for it, and would do better in it than in any other position in life? Entertaining these views, I rejoice that dentistry has, though the youngest of the professions, welcomed woman, in two of our State organizations, to full membership, and have recognized her as a co-laborer in a field full of interest, and one in which, to my judgment, she is well adapted. It may be that I stand alone in these views, both with the Faculty of this College and the audience; but I trust not, as, in my judgment, the advancement of the world depends, to a large extent, upon their adoption. But the number who are willing to sustain them is of small moment; the question to be considered is, are they true? Has not every parent, who fails to give his or her daughter a knowledge of some trade or profession, neglected one of the plainest requirements of life? Certainly. The world is full of misery on that account. I am sick of that cant and hypocrisy that would prevent woman doing anything to earn her daily bread, and calls it a dispensation of Providence when that woman is left with a family of children to support, by toiling her days and nights away over the needle. Let your daughter enter the professions, or anything she can earn a livelihood at, and regard it as a dispensation of Providence that He has, in His wisdom, given that daughter brains enough to take a position in life higher than you may have ever been able to fill. The world is very slowly coming to an appreciation of this great truth; but it will grow, and become the belief of the nations in time, not in yours and mine, perhaps, but it will come; for "the mills of the gods grind slow, but they grind sure."

The profession of dentistry has been slow to receive that appreciation at the hands of the public that it deserves. Few realize how much they are indebted to the intelligent practitioner for the healthful action of all

the functions of life. Still fewer realize the fact that many of the diseases that puzzle the physician, and destroy the patient's happiness, have for their basis diseased teeth. The ignorance on this subject is lamentable, and the effects are disastrous, not only on you, but on future generations.

We. Americans, have the unenviable reputation of having the poorest teeth of all the nations of the world. We cannot attribute this solely to climatic influence. Is it not to be supposed that those who emigrated to these shores in the early history of this country, had quite as good teeth as the nations of Europe have at the present? What may we infer to be cause of the degeneracy? The early settler was not only exposed to the miasmatic influence of all newly settled countries, but the necessities of toil engendered carelessness in those niceties of life, regarded by modern civilization as so important. The teeth are always the first to be neglected. Some you are aware will be very particular to wash the face, and are over nice as to the cut of the collar, but ignore the tooth brush entirely, under the supposition, doubtless, that nature having supplied the teeth it is her business to take care of them. So our forefathers, doubtless, thought, and carelessness engendered disease—disease, combined with an undue amount of physical toil, produces misshapen and imperfect The peculiarities of the parents were handed down from generation to generation, each in its turn adding to the trouble, until it will take a long period of time to overcome the evil. But are we not overcoming it? Most assuredly we are. Look around you even now, and judge if the teeth of this generation are not better than those of our fathers and mothers at the same period of life. With the present attainments in dental knowledge, there is no reason why any of you should ever need an artificial substitute, and, in a properly instructed community, the labors of the mechanical dentist must in time be confined to a very narrow field. But are you instructed? I answer, no, and the dental profession are much to blame for this state of things. The old adage "that a little knowledge is a dangerous thing," is an absurdity and has been productive of much mischief. It is unnecessary to suppose that you, as parents, need ever become doctors or dentists to have a sufficient modicum of knowledge to enable you to discern intelligently many of the diseased conditions that you meet with in your children. How many little ones to-day might be making glad the home fireside, if you, fathers and mothers, knew more about dentition than you do. The little mounds that rise over their bodies, everywhere by thousands, are in many cases, (how many who can tell?) the result of gross ignorance on the part of the parents. You say we depend on our physician. Is the physician ubiquitous? He cannot do everything. The little sufferer is teething. You see it suffering, and know nothing of the cause. It is your business

to know. You have undertaken the care of a helpless human soul, encased in a body liable to all the ills of humanity; it is your place to be able to alleviate some of those ills. You should know the period of the eruption of your child's teeth, and you should also know how to use the lance judiciously. I am aware that with this knowledge, some professional gentlemen would have smaller bills to send in yearly; but what is that, when weighed in the balance with human suffering? If the spreading of intelligence amongst the masses goes to destroy any cherished profession or means of livelihood, the sooner that is accomplished the better. has it that effect? Not at all. The dentist is best appreciated in communities that possess the largest amount of general intelligence, and, in proportion as you go down in the scale, is he contemned and his services ridiculed. How much do you, who have passed the meridian and are descending the pathway of life, owe to dental skill? Our fathers look dignified in their old age with mouth in full proportion, and our mothers are comely behind their artificial sets. But looks are secondary. The man and woman of seventy enjoy their food, and prepare it as well for the digestive organs as the youth of twenty. Health is thereby preserved, and, encased in vigorous bodies, we generally find vigorous minds. I have no doubt that the liability to lapse into semi-idiocy as age advances will, to a large extent, be prevented by this alone. I do not repeat these things to make a special plea for my profession; but rather to urge you to higher attainments in the knowledge that I conceive so essential to happiness. An education should be considered incomplete, either to man or woman, that had not embraced at least a partial course in one of the medical or dental schools. Give your daughters less French and music, and more science; and have your sons to believe there is a higher remuneration in the study of the great laws that govern the universe, than in dancing attendance at balls and theatres upon every young miss who values his attentions in proportion to the amount of cash spent.

Gentlemen of the graduating class, you have finished your course, you have won the crown. What now shall be your future? This must be marked out by yourselves. The broad paths of a world lie open before you, the book of your lives still lies sealed. It is for you alone to unband the clasp and begin the lesson. It is one full of interest, full of grand work, full of cherished hopes, full, perhaps, of promises redeemed, and alas it may be full of withered hopes, full of clouded days and saddened nights. But, we cherish the beautiful in life. Mourning and sorrow may haunt us all our life long; but the sunshine of the heart lingers at the threshold of every dwelling; and, in proportion as we throw open the closed doors, the streaming rays enter therein. Yes, cherish the beautiful. It will build you up in your profession, it will make the labor of relieving

poor humanity an artistic inspiration. It will make you strong along many a weary mile of life's travel, and gladden, perhaps, the soul in its outlook on eternity at the close.

Lives are not the creation of a day. They are not born, they are the experiences that men feel, in other words, the power that these experiences give to make the world heed their individual presence. The man who goes through this world and is satisfied with the crumbs that fall from other men's tables, is not living, it is death in life. He is a walking corpse, hanging a millstone about the necks of other aspiring intellects. Life is then an active, earnest, unswerving determination to build higher than other men; a great effort to leave behind us "footprints on the sands of time," that have character, and can be read with instruction by other minds. Mere vegetative existence is not the point for the human soul to aspire to. Then, ere you take the first step onward, stop to consider. You are now in the position of the man at the base of the mountain. He feels not intimidated at the difficulties. He is to reach the top; if so, he must clamber rocks, scale precipices, toil long and wearily; but the end justifies the outlay of labor. So with you, make up your minds to meet the contest, for a professional life is a contest of no mean proportions, meet it with brave hearts. The instructions you have received in the several departments of this institution are full, but they are the mere corner stone to your building. If you, as master-builder, go no higher, the foundation will in time crumble away, and men will point to you as an evidence of wasted energy; but, if you quietly labor on, the corner-stone ceases to be the prominent object, and the world looks to the super-structure that is being reared and honors the architect.

From this hour you pass from under the care of your teachers, and go forth to gather from general sources of knowledge and experience, relying upon your own mental strength. In doing thus, you will necessarily need a wise discrimination, an earnest application, and a determination to follow results to causes. This may not always be attainable; but the effort to accomplish this is education, and the training it gives is what we need for growth.

In this struggle to solve the mysteries of knowledge, neither you nor I may ever attain originality; but we must go through the same experiences of thought that original minds have had to, to solve the problems of science, if we would ever hope to arrive at their level. By this process we qualify ourselves for original investigation; and in so doing, we are not mere slaves to other men's opinions, but, taking them for guides, we pass through the labyrinth of intellectual labor, and eventually come forth to the clear conception of things for ourselves. In other words, we renew our individuality.

In this position you are to-night. To the best of our ability, we have carried you step by step to this hour, and here we leave you; and it depends upon yourselves, whether progress ceases from this moment or whether you go on doing honor to yourselves, by adding to the sum of human knowledge and intelligence; or whether you lay aside all earnest study and give yourselves up to the more selfish business of making money. If this is your object, ignore mental labor or any effort to bring out new ideas, or to improve those already held. Original men rarely get rich. The poverty of inventors, the benefactors of the age, has passed into a proverb, and why is this? Because they devote their lives to an idea, regardless of anything but its fullest development. accomplished this successfully, their work is done. To bring to perfection an original thought, is the ever present inspiration, an inspiration too high to descend to the mere chaffering over dollars and cents. It must be through the accidents of life, if you find your truly original man a rich one.

Therefore, select, at the opening of your career, which ye will serve, the accumulation of wealth or the cultivation of the highest intelligence commensurate with your abilities. I have no special advice to give, and perhaps it would not be heeded were it given, but each must follow his own promptings in this matter. The world is doubtless well-constituted, that some are to do the thinking and another class to outwork the brain-labor of other men.

Perseverance in carrying forward your professional duties is equally as important to you as any of the questions named. A want of courage to meet the many obstacles that will be thrown in the way of success, is the cause of many, very many failures, not only in our profession, but in all occupations of life. It is an old but true saying, that the wheel of every man's life is ever turning, and however low down he may be to-day, the time must come when the revolution carries him up higher and higher still. You need not expect the world to take you by the hand at the outset of life—the world rarely ever does so kind an act—but, in proportion as you give evidence of ability to deserve that appreciation, you will find some few to comprehend it; and as small springs become rivulets, and and rivulets rivers, and rivers oceans, so you will, by regular gradations, move onward in the progressive march to independence. Therefore faint not, nor grow weary with waiting at the slow appreciation the world gives you. Eat your brown bread, if needs be, in patience. Learn to labor and to wait.

There is something grand in a struggling soul, with an instinctive aspiration for the unattained, groping in darkness, poverty and neglect, and, as we read these experiences in the lives of great minds, we feel to glory in our race. It is a severe training school, yet it braces the mental nerves, and makes our intellectual muscles grow strong and powerful for the after-work of life.

Let true success be based on ability and a high moral standard. The character of professional men is more open to criticism than those of other occupations; and this is especially true of the doctor and dentist. The world has a right to judge of your moral character, and should so judge before you are taken by the hand. You have to deal, during your professional life, with all characters, sexes and conditions. So demean yourselves that the humblest of your patients may never be able to cast a stain on your character, or do other than remember you as the true gentleman in every respect. Coarseness of manners, or untidyness in personal appearance, or a want of an enlarged sympathy with human suffering, are unbearable in the dental operator. Treat the little sufferer, that may come under your care, with the gentleness of a father, remembering ever that these little blossoms become the full grown flower, to bless you in after years for your care and kindness in its young life. Bear with the idiosyncracies of patients, as you hope to be borne with when the heavy hand of disease holds you in its iron embrace. Possess your souls in patience, for you will need, through every hour of your professional career, all you can summon to your aid; in a word, be true to your highest conceptions of duty, and you will grow physically, mentally and sympathetically, and ultimately reap the full reward of all your deservings.

I have spoken to you as though all were at the commencement of life. I am aware this is not so. All honor to those who have left professional duties to qualify themselves to perform more intelligently the duties of the dentist. There has been nothing, in all this course, more encouraging than to have those in this class willing to listen and receive instruction at the hands of younger men. With middle life, so full of aspiration for a higher cultivation, may we not expect that the declining years will be rendered beautiful by accumulated wisdom, and the snows of many winters melt before the warm life of mental activity.

In this hour of triumph, two of your number are lying on beds of sickness, far from friends and home. Though the evening is full of hopes realized, and bright anticipations, it is dimmed by the cloud of their absence; the vacancy is sensibly felt. We would send to them an expression of our deep sympathy, and trust that the dark shadow, that lingers around the young life of one of these, may pass away, and that there may still be a future for him in this beautiful world.

Gentlemen, the work of the hour is done—the hand is already pointing to the moment when you snap the cord that has bound us together, and hasten onward to the several homes that lie on so many divergent paths.

Those who have watched and waited, through all your lives long, are anxiously looking for the reunion, so soon, I trust, to take place. This hour is yours and theirs; yours in hope, theirs in anticipation. You go forth from this busy hum of life, I trust, better men than when you entered; with enlarged and grander views of life: with determination to live and be more than you have ever been. Each of you will move in a circle of active duty; a circle that must ever widen in proportion to your faithful work.

In far distant sections of our country you may find your future homes. Wherever you may go, whether to the North, South, East or West of our own land, or to the regions glorious with the luxuriance of tropical life, you may rest assured that you carry with you the anxious fears and earnest hopes of your teachers. We will rejoice in your successes, sympathise in your disappointments, and will ask you in return to aid us, by all the powers of cultivated intellects, in solving the problems that yet darken our professional pathway. You go, we remain, to toil on for the benefit of other minds; and though it may be that the clods of the valley cover some of us, and we see each other no more in this life, yet the work that has been accomplished can never be lost. The small seed will become the full waving field of grain, and the harvest will be gathered, whatever may become of you and I. The welcome home—the glad song of rejoicing already sounds in your ear—the satisfaction of loved ones, at battle fought and victory won, awaits you, and with them and you, I, too, rejoice, and trust that the choral note of happiness may ever have as true a foundation. We bid you farewell, and may the rugged and the smooth places of life each have their lessons of wisdom, and may the blessings of the truly good follow you for ever and for ever.

Thus ended this instructive and interesting occasion. It is one always replete with the best feelings of our nature and kindly wishes for the success of the young graduate, from teachers and audience, and the regrets of all that the intercourse of months must have so sudden a termination; but the genius of our American life, hurried and active, allows no time for vain regrets. Onward, to the great work of life, each one must address himself, meet its difficulties and its successes with equanimity, and in years be able to revert in memory to the session of 1865—'66 as an occasion full of pleasant reminiscences.

WE ARE under special obligations to Dr. Norman W. Kingsley, of New York, for a valuable contribution to the museum of the College, viz: the plaster casts, metallic dies and appliances, showing Dr. Kingsley's method of treating cleft palate by the application of a substitute; also to Drs. Hape and Nelson for valuable specimens of necrosis of inferior maxilla.

G. T. B.

BALTIMORE COLLEGE OF DENTAL SURGERY.

The twenty-sixth annual commencement of this College took place on Friday evening, March 2d, at the New Assembly Rooms. The hall was filled to its utmost capacity, and the excellent music of the Blues' band tended in a great measure to enliven the scene. The exercises commenced with prayer by the Rev. Dr. Roberts. The degree of Doctor of Dental Surgery was conferred upon the following gentlemen, composing the graduating class, by Prof. F. J. S. Gorgas, Dean of the Faculty: Chas. Porter Baird, Tennessee; Andrew Benjamin Brookins, Florida; Stanley Brown, Texas; John Thompson Coumbe, District of Columbia, Albert Philip Gore, Maryland; William Albert Jones, Virginia; Robert Paine Nevill, Alabama; Thomas Nash Read, Virginia; Charles Henry Thayer, Rhode Island; C. Watson Westmoreland, Alabama.

The valedictory address was delivered by Prof. Thomas E. Bond. Several changes having occurred in the Faculty since the last annual commencement, the following is a correct list of the officers of the Balti-

more College of Dental Surgery:

Thomas E. Bond, M. D., Professor of Pathology and Therapeutics; Philip H. Austen, M. D., D. D. S., Professor of Dental Science and Mechanism; Ferdinand J. S. Gorgas, M. D., D. D. S., Professor of Dental Surgery; A. Snowden Piggot, M. D., Professor of Chemistry; Russell Murdoch, M. D., Professor of Anatomy; Henry Reginald Noel, M. D., Professor of Physiology; Henry Hobart Keech, D. D. S., Demonstrator of Operative Dentistry; Thomas Sollers Waters, D. D. S., Demonstrator of Mechanical Dentistry; Claude Baxley, M. D., Demonstrator of Anatomy; F. J. S. Gorgas, M. D., Dean of the Faculty.

THE NEW YORK COLLEGE OF DENTISTRY.

About a year ago the Legislature of this State granted a charter for the incorporation of a Dental College in this city, and appointed some nine gentlemen of the city, including several well-down dentists and medical men, incorporators of that institution. Up to this time, however, owing to several causes, no definite action has been taken by the corporators toward the fulfillment of this design. Last evening a meeting of the dentists of this city and vicinity was held at the house of Dr. George E. Hawes, No. 21 Bond street, to consider what action it would be expedient to take in reference, to carrying out the provisions of this act. Nearly all the leading dentists of New York, and some from adjoining cities, were present. A spirited discussion was held on the merits of the proposed institution, participated in by such members of the profession as Dr. Dwinell, Dr. Main, Dr. Lord, Dr. Parmly, Dr. Hawes, Dr. Dodge, Dr. E. J. Dunning, Dr. J. H. Foster, Prof. R. K. Brown, M. D., F. D. Weiss, M. D., and The unanimous opinion of those present seemed to be, that some institution which should impart a thorough scientific and practical knowledge of the art of dentistry was imperitavely needed in this city. The only differences of opinion were in regard to some of the details of its management. After considerable discussion, a committee, appointed for the purpose, presented a preamble and resolution, which were adopted by acclamation.

Editorial.

Instructions in the Manipulation of Hard Rubber or Vulcanite for Dental Purposes. By Prof. E. Wildman. This is a small work, published by S. S. White, giving a general outline of the process of making rubber work. It is a clear and concise explanation of the manner of working rubber from making the models to finishing the piece. Mounting full sets, partial sets, with or without clasps, attaching teeth to a gold or platina plate, refitting gold plates with rubber, and the mode of refitting vulcanite sets is described so plainly that any person who can mount teeth on metal will find no difficulty in understanding this process. And although the work was written more for those who have had little or no experience in working rubber still the most proficient will find much in it that is new and useful. So rapid has been the sales that it is now in the third edition. We confidently recommend this as one of the most useful works for dentists that has ever been published.

T. L. B.

A New Vulcanizer.—Dr. George E. Hayes has originated several patterns of vulcanizers, all of which display much taste and skill; he now offers a new one which he styles "The Iron Clad," which it is in reality; it consists of a copper boiler one-sixteenth of an inch in thickness, encased in a malleable iron shell an eighth of an inch thick. This iron clad is designed to act on a principle directly the reverse of the larger class, by shielding those around it from harm, instead of scattering death and destruction. We are glad that dentists have been sufficiently awakened to the danger of using such frail shells as are usually made, as to make it necessary for at least one manufacturer to consult his and their mutual interests. Dr. Hays has taken a step in the right direction. E. W.

DRS. SNOW AND LEWIS, of Buffalo, New York, have invented an automatic plugger which, for simplicity and effectiveness, exceeds any instrument of the kind we have ever seen. It is very simple in construction, and all the works are enclosed in the handle, so that, in appearance, it resembles very much an ordinary large sized plugger. It strikes with four degrees of force; the lightest can be used on almost any tooth, be it ever so frail, while the heaviest is as hard as is ever required. We have been using one of the instruments for some time past, and find it equal to the mallet, in some cases we prefer it, as it can be used where it is almost impossible to use the mallet.

T. L. B.

CAOUTCHOUC.—The article upon this subject would have been continued in this number of the TIMES, but from the misfortune of the manuscript having been lost on route to the printer, and was not recovered until too late for insertion.

E. W.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE ELVENTH ANNUAL SESSION, 1866-'67.



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JAMES TRUMAN, D. D. S.,
PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIFE DENTISTRY

J. M. BARSTOW, D. D. S.,
DEMONSTRATOR OF MECHANICAL DENTISTRY.

The Lectures to the Regular Course commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course, (Demonstrators' Ticket included,) - \$100

Matriculation, (paid but once,) - - - 5

Diploma Fee, - - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eleventh Annual Session, 1866-'67.

The eleventh annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

COURSE OF LECTURES,

CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as eas be performed before the class.

DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration. At the Clinic the incumbent of this chair will also demonstrate before the class the various operations described in his course of lectures.

MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, .vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch or the art, will in place receive due attention and investigation.

PRINCIPLES OF DENTAL SURGERY AND THERAPEUTIOS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissecting room in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College; five years' practice, inclusive of the term of pupilage, will also be considered equivalent to the first course of lectures. If the candidate has been in continued practice since 1852, he is eligible for graduation without attendance on lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or pr ctice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Deutal Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Deutistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

DENTAL TIMES,

A

QUARTERLY JOURNAL

DENTAL SCIENCE.

EDITED WAD BUBLISHED BA

DRS. T. L. BUCKINGHAM, G. T. BARKER,

E. WILDMAN, W. S. FORBES,

and JAMES TRUMAN.

THE FACULTY

OF THE

Zennsylvania College of Jental Surgery.

VOL. IV.

PHILADELPHIA: 1867.

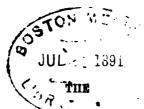


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No. 1.

OAOUTOHOUC.

ITS HISTORY, PROPERTIES; ITS COMBINATIONS FORMING HARD RUBBER,
AND THE MANNER OF WORKING IT FOR DENTAL PURPOSES.

BY B. WILDMAN, Y. D., D. D. S.

(CONTINUED FROM PAGE 12, VOL. 111.)

In the last article upon this subject, on page 11, was given a table of the elastic force of steam, at a range of temperature from 212° to 418.46°, expressed in atmospheres and also in pounds, taking the atmospheric pressure as 14.7 pounds to the square inch. As this table is not comprehended by some readers, I will, by way of explanation, state that at 212° F., the elastic force of steam is one atmosphere, or 14.7 pounds to the square inch; this is the pressure upon the internal surface of the boiler, at the same time we have this counterbalanced by the atmospheric pressure on its external surface; the two forces being equal, there is no rending force exerted by the steam at this temperature. At 250.52°, the elastic force of steam is two atmospheres, or 29.4 pounds to the square inch, acting upon the internal surface of the boiler, and one atmosphere, or 14.7 pounds, to the square inch on the external surface; hence the rending or bursting force of steam, at this pressure, is one atmosphere, or 14.7 pounds, to the square inch. And so on through the different temperatures given in the table we must deduct the one atmosphere, or 14.7. pounds pressure, to the square inch on the external surface, from the elastic force of steam to ascertain its rending force upon every square inch of the internal surface of the boiler. From this we find at 320.86°, the ordinary vulcanizing point, we have a rending or bursting force of 73.5 pounds upon every square inch of the boiler exerted by the steam within. Some of the tables of the elastic force of steam give a still greater pressure; but the one quoted indicates a sufficient power of the imprisoned force we daily, and often thoughtlessly deal with, to warn every operator of the necessity of using care in the selection of a vulcanizer, and in its management. This subject is so ably commented upon

by Dr. A. Lawrence, in an article on "Steam Pressure in Vulcanizers," page 97, vol. ii. of this journal, that it is not requisite for me to dilate upon it.

Vulcanizing.—Place the flask, or flasks if more than one case is to be vulcanized at the same time, in the vulcanizer; add water sufficient to cover the top flask at least an inch; dust the top of the packing with finely pulverized soapstone, or whiting, to prevent the cap from adhering thereto when the vulcanizer is opened. A better plan is to keep the soapstone (which I give the preference) in a broad-mouthed vial, having the orifice covered with thin gauze. By dusting the soapstone on in this manner through the gauze it is evenly spread; then place the cap on, and screw down firmly. When the heat has been raised to about 240°, tighten the nuts again, as the packing, especially if new, yields when heated, and without this precaution might be blown out, or cause a leakage of steam.

The next step is to apply the heat. Gas, alcohol and coal oil are used for generating heat, and most vulcanizers are constructed to burn either gas or alcohol, whichever may best suit the convenience of the operator. Coal oil is coming into use; in combustion it produces great heat, and promises to supersede alcohol on the score of economy. Whichever substance—gas, alcohol or coal oil—is used, the flow should be so regulated, and the burner so constructed, as to have complete combustion. Without this precaution, free carbon will be deposited upon the base and sides of the vulcanizer; this deposit is a non-conductor of heat, and will, in a great measure, prevent the desired action of the flame.

After attaining to, or a little above 212°, raise the heat gradually up to 320° F., when that is taken as the vulcanizing point. The time that should be expended in raising the heat will vary according to the thickness of the piece to be vulcanised; for a thin piece, not less than half an hour, and for thick masses the time should be extended to an hour or more. For very heavy pieces I think it a better plan to retain the heat at 280° for a time, and then very gradually bring it up to 320°. In raising the heat, occasionally let off steam to ascertain the true temperature within the boiler, as there appears to be no circulation within when the joints are perfectly tight. My attention was first called to this some years since, when vulcanizing one day, the thermometer indicated the temperature of 320°; although the flame was not cut down, after some time there was no indication of an increase of heat. I became satisfied there was something wrong; upon examination, found no deposit of carbon upon the base of the vulcanizer, which showed the heat must be accumulating within. Upon pressing down the ring of the safety valve, (in Hays' thermometer, the one used,) thereby establishing a circulation

in the boiler, the mercury immediately ran up to 850°. In this instance, when the steam was quiescent, the thermometer indicated a rending force of 73.5 pounds; when the circulation was established, I found this force was really 117.6 pounds to the square inch. Since then I have uniformly followed the advice above given.

When the vulcanising point is attained, lower the flame so that the heat shall remain stationary until the end of the operation. To maintain this point requires care and watchfulness on the part of the operator, and after the remarks upon the elastic force of steam, in the preceding article, I trust he will fully appreciate the danger of negligence, especially when the vulcanising point is fixed as high as 320°.

The time the heat is to be held at 320° F. to vulcanize, varies in different makes of vulcanizers—probably owing to the want of uniformity of the thermometers used—from one hour to an hour and a half; also, different varieties of rubber require different lengths of time to vulcanize. A good plan is to test a new vulcanizer, or when setting a new thermometer with a trial piece, before attempting to vulcanize a set of teeth, taking for time one hour and a quarter, and noting the effect.

Rubber may be vulcanized at a much lower temperature than 320°, but the time must be proportionably extended. A higher temperature may be used, say 330°, and the time shortened; but it is not advisable to carry the heat beyond 320°, and experiments which I shall relate prove we could procure a much better article by lowering the vulcanizing point, and extending the time. When the heat is carried very high, it causes the rubber to darken and become brittle, and the toughness and elasticity, so essential for dental purposes, are lost.

Much has been said by experts in working rubber about the elimination of sulphur gases during vulcanization. The remarks upon this subject, by Austin G. Day, in his Specification, are so interesting I shall quote them in substance:

"In the vulcanizing process, there is eliminated during the whole operation a constant discharge of sulphuretted hydrogen, and other sulphuretted gases, which must have means of escape.

"The escape of these gases from soft elastic rubber is very easy, but from hard rubber or gutta percha, whose pores on the surface portions are very close, it is difficult for them to escape. The consequence is, that the mass is liable to be exploded from the increased pressure of the confined gases within it. Hence, the triple length of time required to vulcanize my composition, (caoutchouc and sulphur alone,) and the greater heat to expel the gases. From the greater degree of compactness of this composition, great difficulty has been experienced in vulcanizing pieces of half an inch in thickness. But by my present improved manage-

ment of the heat in vulcanizing, (raising it very gradually, step by step, up to the highest point,) I am enabled to vulcanize pieces of an inch et more in thickness with great uniformity and perfection.

"Different rubber compounds, containing dissimilar ingredients, will not vulcanize in the same time and at the same temperature, but the time and temperature must be adapted to the constitution of the mass or mixture to develope its best qualities. A mixture containing much earthy matter may be vulcanized in a much shorter time than one constituted of caoutchouc and sulphur alone, and yet be solid, owing to the earthy matter facilitating the escape of the gases evolved in its substance, at the same time such compositions are destitute of elasticity and flexibility. Suppose the vulcanising point be set from 274° to 300°, the earthy base composition would be worthless and brittle at the end of six hours, and nearly charred at the end of eighteen hours heat; while my composition of esoutchouc and sulphur only would have acquired an ivory hardness, with the spring temper of steel.

"Vulcanization is more difficult in thick than with thin articles, from the fact already stated respecting sulphur gases escaping through the pores of the gum; under these circumstances, if the mass hardens externally faster than internally, the confined gases may explode the mass and spoil the form. Therefore my method is to continue the heat at a long time at 275°. For a piece that is about five-eighths of an inch thick, the time required for vulcanization is thirteen and a half hours.

"Experiments with the same grades of time, commencing at the highest, then lowering the heat, also raising it quickly to 295°, and retaining at that point the whole period, produced unsatisfactory results."

These experiments, having been conducted in the large vulcanisers used in the manufactories, extend over a much greater length of time than would be required to accomplish the same end in the small ones employed for dental purposes.

In volume iii, page 589, of the *Dental Cosmos*, we find the results of some experiments by Dr. George E. Hayes, which confirm the position taken by Mr. Day, relative to the escape of sulphur gases during vulcanization. He says, "Having occasion to vulcanize a thicker piece than usual, the oven was heated, in fifteen minutes, up to 820°, and retained there the prescribed time. On removal, the mass was found to have swelled to double its original size, and was porous inside.

"The quick process of heating up to 320°, using the ordinary vulcanizer, with a thick piece, produced the same bad result."

In a subsequent trial, using his vulcanising oven, "a piece one-half an inch in diameter come out solid, it having been heated from 210° to 320° in one hour, and the burner extinguished immediately on attaining that degree. The highest perfection seems to be attained when the thermometer marks 320°, without waiting for any continued exposure. It is light colored, compact, solid and tough. A continued exposure darkens the tint without any apparent benefit. The advantages gained by this modified process are threefold; first, a better quality of vulcanite; second, the ability to harden thick pieces; third, the tedious watching of the thermometer to retain the heat at any given point is not required. A very few observations only are required to ensure a good result. The time may be one hour, or three, or even five in bringing up the heat to the given point, and as the increase is so gradual, a few minutes, more or less, in extinguishing the burner ceases to be material."

Some doubt the evolution of gas from the substance of the rubber during vulcanization being the cause of its sponginess, and attribute this defect to various other causes. To set this matter at rest, and ascertain if sulphuretted hydrogen was given off during the hardening process, a bulb was blown at the end of a glass tube, this was filled with the American Hard Rubber Company's red rubber, the tube was then drawn out very small from immediately above the bulb, and so curved that when the bulb was immersed in the paraffine bath, the small tube could be inserted into a vessel beside it.

The bulb was then placed in a paraffine bath, and the end of the curved tube inserted into a vessel containing a solution of acetate of lead. The heat was then raised to 820° F., and retained at that point for one hour and a quarter.

The mean results of several experiments conducted in this manner was, that during the first thirty or forty minutes after the heat had attained to 320°, bubbles of sulphuretted hydrogen came over at short intervals, and at the expiration of this time it was evolved in a continuous stream, which continued for a few minutes, causing a copious precipitate of black sulphite of lead. After this rapid evolution, until the expiration of the hour and a quarter, the gas was only given off sparingly at intervals. This experiment gave ocular demonstration that sulphuretted hydrogen gas is eliminated during vulcanization, and in large quantities, and conclusively shows that for thick pieces especially, the heat should be slowly raised, in order to give time for a free escape of the gas as it is generated, and also the rubber should be retained under strong pressure to ensure a successful result.

I have long been under the impression that if the vulcanizating point was taken at a lower temperature than generally used, much better results, in color and quality of rubber, would be obtained.

An experiment to ascertain the effect of a continued temperature of 280° F., upon unvulcanized red rubber, developed some facts which are of interest, and I will lay before the reader the results.

The rubber used was the American Hard Rubber Company's red. Integlass tubes, sealed at the lower end, was introduced strips of rubber, the upper end was then corked. These tubes were placed in a bath of parafine, in an upright position, so that the corks should be some distance above the parafine. The temperature was then raised to 280° F., and retained steadily at that point, from time to time, as below designated: a a tube was taken out, and the effect upon the rubber noted.

At the expiration of two hours.—The color scarcely changed. Texture. soft, non-adhesive, unlike unvulcanized rubber, not very elastic; was not soluble in the solvents of coautchouc, consequently the change had already taken place.

At the expiration of three hours.—Color slightly changed. Texture, &c., soft, like pure caoutchouc, very elastic; similar in properties to soft vulcanized rubber; totally unlike hard rubber, and was not affected by the solvents of caoutchouc after an immersion of sixty hours.

At the expiration of four hours.—The color was slightly darkened. Texture, softness somewhat diminished; was not quite so elastic as at the end of three hours.

At the expiration of five hours.—Color changed slightly. Texture, stiffer; has lost the velvety feel it possessed at the end of three hours: the elasticity diminished.

At the expiration of six hours.—The change noted at the end of five hours augmented.

At the expiration of seven hours.—The change still further augmented: somewhat flexible; the elasticity gone.

At the expiration of eight hours.—The color darkened, but much lighter than obtained by the ordinary quick process of vulcanizing at 320°. Texture, close, compact, free from porosity, which generally occurs when rubber is vulcanized by the quick process and not under pressure, hard, in thin strips very elastic like spring steel, cuts tough like the best brown rubber, free from a "hackly feel," the shaving tough. It was well done, and a much better article, in regard to color, elasticity and toughness, than is produced by the usual method of vulcanizing.

At the expiration of nine hours.—Color becoming darkened slightly. Texture, rather harder, the shaving tough, but not quite so much so as at

the end of eight hours; thin strips more brittle. This may be set down as rather overdone.

At the expiration of ten hours.—The change mentioned above slightly augmented.

At the expiration of eleven hours.—The color more darkened. Texture, more brittle, although but little if any darker or more brittle than it would have been if vulcanized at 320° for one hour and a quarter.

This experiment has been repeated several times with uniform results. It shows us that at 280° F., the American Hard Rubber Company's red rubber will, at the end of three hours, become a perfectly elastic soft rubber, and after eight hours' exposure, become vulcanized into a hard elastic rubber, possessing properties, such as color, toughness and elasticity, much superior to what is usually obtained.

It is worthy of note that, although the last specimen was at the vulcanizing point for three hours over time, its good properties were not entirely destroyed.

Recently I had occasion to make a practical application of vulcanizing a heavy piece at 280°; it was a pad for an umbilical hernia. The base plate of the pad was elliptical in shape, the long diameter five, and the short two and three-quarter inches, thickness one-eighth of an inch. Upon this was a central elevation two and a half inches in diameter, and one quarter of an inch thick, and from this central elevation sprang a cone having a diameter at the base of one and three-sixteenths of an inch, and one inch in height, the whole forming one solid piece.

To fill the mould required upwards of two troy ounces of red rubber; the magnitude and thickness of the piece showed the necessity of using care in vulcanizing it. The time and temperature were eight and a half hours at 280°. The resulting color was very good, light, texture compact and free from any signs of porosity, shaving very tough.

The saddle or back piece of this truss was somewhat similar in general outline of form, and equally large in dimensions, but was much thinner; the thickest point being but five-sixteenths of an inch, and requiring but about half the quantity of rubber to fill the mould. This was vulcanized at 320°, the usual time being given; care was taken to raise the heat very gradually up to the vulcanizing point. The rubber was compact, the color and texture greatly inferior to the preceding.

The results of many other experiments might be related to prove the position taken, but enough has been given to allow us to set it down as a rule, to avoid porosity in thick pieces, vulcanize slowly at a moderate heat, and under strong pressure. To produce the best results in color, strength and elasticity, vulcanize at a lower temperature than \$20°, giving length of time in proportion to the reduction of temperature.

When the time for vulcanizing has expired, cut off the flame and allow the vulcanizer to cool down to 212°; this may be hastened by letting of the steam, but it is much better to allow it to cool gradually without doing so, at least down to about 240°. When the temperature falls to 212°, loosen the nuts and take off the cap or head. If a trial piece is used, take it out and examine; if properly done, remove the flask, and permit it to cool gradually. It should not be placed in cold water to hasten the cooling, as this would endanger fracturing the porcelain.

Opening the Flask:—When the flask is cold, not before, remove the top piece, then carefully pry the sections apart, commencing by insinuating the point of a knife between the joints at different points until they yield. Then with a pointed knife cut away the plaster near the margin of the flask, until the central part containing the case may be removed; or, where the flasks have much bevel, and have been properly coated before having been filled, by gentle taps with the hammer upon the metal the whole of the plaster will separate in a body. The plaster will readily separate from the rubber if the mould has been coated as directed in the preceding article. Now wash with a stiff brush, and the case is ready for the finishing process.

Cleaning the Flasks and Vulcanizer.—At this step the operator should immediately remove all the plaster from the flasks, and wash and dry them. When first opened they are much more readily cleaned than when the plaster has been permitted to dry and become cemented to the metal by its oxidization; besides economy in time, they are in a good condition when next required for use, and will last much longer than if thrown aside with the plaster adhering. The vulcanizer should also be washed to remove the deposit formed within it.

Finishing.—With coarse files, made especially for this work, remove the surplus rubber; the straight half-round are adapted for the outer surface, and the curved for the lingual surface of the plate. Scrapers then come into play to obliterate the file marks, and also such surplus as is not readily reached with the file: the curved form is very useful on the lingual surface. With gravers cut away the excess from around the teeth, making the joining even and smooth. Coarse burrs for the lathe cut more rapidly than the file or scrapers, but without great care in their use there is danger of cutting through the plate. To avoid the unpleasant accident of cutting through the plate in dressing it down, frequently use the callipers to ascertain its thickness. When reduced to the proper thickness, rub down smooth with fine sand paper. Then prepare the polish by using very finely pulverized pumice stone, made into a paste with water, to obliterate all scratches. It may be applied by using a stick of soft porous wood; cotton wood is well adapted for this purpose,

as it is very porous and tough. Or it may be applied on a cork wheel in the lathe, or better with a felt wheel. For some parts a stiff brush wheel is useful. Dr. Parry recommends cones made of soft vulcanized rubber as a medium of application. I have used the soft rubber cone, and find it very efficient and durable. As they are not yet in the market, those who desire can make them by first attaching a piece of soft vulcanized rubber, of sufficient thickness, to the mandrel of the lathe, then trimming as near as may be to the form of a cone with a sharp knife, keeping the rubber wet while cutting it. After which it may be dressed perfectly true with a piece of coarse gritstone; a piece of old grindstone answers the purpose well. The cone should revolve rapidly, and be kept dry while the stone is being applied.

In some cases, more particularly in partial sets, parts not readily accessible to the wheel or stick, may be reached by having a hank of coarse thread, charged with wet pumice; one end of the hank held in the vise, the other by the left hand, while the piece is rubbed against it. Or instead of using sand paper and pumice after the scraper, very finely pulverized silex may be substituted. Many prefer this mode of procedure; apply it in the same manner as pumice. Scotch stone in slips, kept wet, is also used for the same purpose, and it is very effective; it cuts fast, and leaves a smooth surface.

When all the scratches have been obliterated, proceed to polish. This may be done by using a cotton buffer, or a very soft brush wheel on a lathe, with calcined buck horn or prepared chalk, free from grit, moistened into a thin paste with water. In giving the finishing touches with the polishing material, have it diluted very thin, and the wheel running at a high speed, at the same time giving the work a vibrating motion. To give an exquisite finish, then apply fine rotten stone, free from grit or rouge, mixed with clive oil, on chamois skin or on the hand, after which remove the oily coating with dry rotten stone, rouge or fine sine white, applied in the same manner. The burnisher may be used with advantage on parts not otherwise accessible.

The palatal surface of the plate cannot be dressed down and polished without destroying the accuracy of its adaptation. Hence the necessity of having the face of the model upon which it reposes, when in the plastic condition, smooth and free from imperfections. To ensure success, every stage in the process of finishing should be complete in itself, and the work should be washed before proceeding to the next.

Every piece of work should receive a perfect polish before insertion into the mouth. I remember reading an article in a dental journal, stating that it was useless to give a fine finish, as the polish was soon destroyed in the mouth. So far as my observation goes, this is a mistaken

idea. The surface of the piece after having been worn a short time, especially if the patient is not careful to frequently cleanse it, will become obscured by a deposition from the saliva, giving it a dead appearance similar to an erosion of the surface; this coating may be removed, while still moist, by rubbing with a soft substance, as a napkin or chamois skis. developing the polished surface, remaining intact.

[TO BE CONTINUED.]

ORGANIZATION.

(Read before the Delaware Dental Association.)

BY S. MARSHALL.

Before we rear the walls of a house we must construct a firm foundation. If our foundation is not good, it will be useless to raise a building in splendid symmetry, and externally adorn it in the most picturesque style of architecture, and furnish it with elegant furniture, and decorate it walls with paintings of golden hues, and fill its niches with the choicest libraries, unless we were sure we have a foundation upon which our superstructure will securely rest.

Gentlemen, I feel that our Association yet needs a more sure foundation in the hearts and minds of the dentists of Wilmington and of our peninsula. So I hope you will bear with me while I try to perform the task of riveting more firmly on your minds a clearer perception of the great necessity for more attention, more energy, more spirit and force being thrown into this Association. Every one of you can do something to make our meetings interesting and beneficial. What do we live for! Do we live for ourselves alone? Then leave these crowded cities, and betake yourselves to the prairie, the forest or the cave. If your most supreme good is to be obtained by keeping aloof from one another, then let us dissolve this little band of earnest working souls, who have labored for years to establish this Association, retire to our laboratories, lock ourselves in, and resolve that we will know nothing but what we may peradventure obtain at home, or learn as chance is propitious, and casts a pearl of wisdom now and then into our supremely selfish laps. This has been the policy of dentists, almost exclusively, until within a few years; and strange to say, even now, in the blazing light of this hour, there are some who would aspire to be dentists who do not "see any advantage in Dental Associations." It is a truism that "there are none so blind as those who will not see!"

Where would have been our Dental Periodicals if it were not for associated effort? Our periodicals come to us laden with the choicest thoughts of our noble workingmen; men who are alive to the never-ceasing benefits of constant association with their fellow-practitioners.

Where would be our Dental Schools, but for the aggregation and concentration of the labors of our best men? Could you go into even the best-appointed laboratory of the best-informed dentists in the country, and gain the advantages of a dental education, such as you can acquire by the advantages of a Dental College and the advantages of the combined information of the association of the various professors who fill the various chairs in all well-regulated schools of dentistry? No, no! Your own common-sense will tell you in thunder tones you cannot; and a Dental Society is the next best means of acquiring knowledge. Two dentists, bowever limited be their general information of their profession, cannot converse five minutes upon their methods of practice and plans of procedure in their laboratory, but they will benefit each other. How strange it is that the capacity of the human mind, gigantic as it is in many directions, should fail to see that in the wisdom of the whole is constituted the wisdom of the individual; that in the information of all, as in the happiness of all, is constituted the information of the individual. Do you wish to prepare one for the responsibilities of practice; if you wish to obtain the point of greatest skill, you must learn all you can, and then turn round and tell all you know to the members of the Delaware Dental Association. For just so sure as two candles give more light than one; and certain as it is that yours gives no less after having lighted your neighbor's, just as sure are you to be benefitted by this course. This is a self-evident proposition, and needs no argument to make it clear as sunlight. And the dentist who neglects or refuses to attend the meetings of an association, not only loses that which he might gain from others, but he smothers up the little grain under his selfishness which he thinks is so precious, and yet it is not comparable to a grain of mustard seed. Such a one is unfitted to associate with his fellow-practitioners; he is unfitted for the trying responsibilities of his position; he is unfitted for even the position of a good neighbor; he is unworthy of the confidence and esteem of his patients or the public at large. And the name of him who steadily and persistently refuses to connect himself with a Dental Association, should be made known to the public as one who refuses to take the means placed within his power, to enable him to do that justice to his patients, in his operations, which they have a right to expect and demand. And an intelligent community will soon learn to discriminate between the dentist who uses the best means to perfect himself and he who does not.

Have you lost your time that you have spent in attending these meetings? if so, it is your own fault; you have brought no coals to New Castle, and so there is none for your brother to carry away; but if you had brought coals, some one would have brought grain, and a fair exchange

could have been made, which would have been a great blessing to both of you. A word to the wise is sufficient.

Do you know any less about your profession than when you came to the first semi-annual meeting of this Association? Do you feel more discouraged in undertaking a difficult operation? Have you any less to do because some brother practitioner has learned something from you? Have you not also learned something from him? Have either of you less to do on account of what you have learned? Can it be possible that there is less to do because we have all become better prepared to perform our respective operations? If so, I, for one, am glad in my heart that there is less suffering in the world, and consequently, less for me to suffer. Lord, hasten that day when suffering and misery shall be driven from the earth; that day to which hope looks forward with ardent joy; it is yet hidden deeply in the future, and will require the associated efforts of the whole human race to usher in such a glorious, grand and happy consummation.

And when dentists shall so far have done their part in that great work as to prevent all suffering from the teeth, they will be entitled to the praise and thanks of all mankind. Until then, never, never relax your hold on the association of efforts, and labor in the great work of preparing and perfecting yourselves for the high and responsible duties of our honorable profession.

Have you obtained any less remuneration for your services than you did previous to the organization of this Association? If so, I pity you from my heart, and would advise you to quit, for the pay of a dentist was very poor before. I, for one, feel better prepared to perform my duty to my patients; and the better we are prepared to perform our operations, the more richly will we be rewarded, and the more honorable will be our pesition in the community. Labor for these ends, and your rewards will be graciously showered upon you. Stand firm by your sheet-anchor—the Association—and her sun of wisdom will light your pathway to distinction.

What blind ignorance and stupid folly it is for two dentists, who reside in a town where there is not practice to pay one, to be at sword's points one with another. How much better it would be for them to be social one with another, and agree to take the practice as it came, and not blacken themselves by dabbling in dirt and filth on purpose to throw it on their brother. By this course, they both get less to do; but by an honorable course they would both get more to do. Because it is a fact that if you interfere in a quarrel between neighbors, you are sure to get the ill-will of both; and where two dentists quarrel over a bone, (a tooth to pull,) their neighbors, seeing the quarrel, will avoid helping either, and likely go twenty miles to another dentist. Associated effort will soon rub the angles from your minds, and show you your true position, and the bound-

less advantages of Dental Associations. But if you would reap the greatest blessings from this movement you must work; every one must You must not come here and play the drone, and expect to sip the honey which is gathered from the scattering flowers by the workers! If you do, you will fail; you will find in your comb only bee bread where you might have honey. You must, every one, bring a thought; bring your advance thoughts. Exhibit your best plans for accomplishing your manipulations in the laboratory, and your improvements in practice. Then every one will be a worker; and my word for it, every one will taste the honey that shall be thus harvested from the flowers of a scientific and true system. For it is an eternally fixed law that labor sweetens the bread of life, and he that will not labor shall not enjoy its fruits. Remember this, and act accordingly, and you will see our Association fixed and firm upon a foundation where it must immovably repose until dentistry shall cease to be known as a profession. And on the corridors of time shall your names be engraved, where they shall be read and honored by all good and true men that pass that way to eternity. And a satisfaction will remain with you that men can never rob you of,-a consciousness that you have done your duty, and done it to the best of your ability, after seeking the best means of crowning yourselves with that ability. For this you will receive the reverence of men, the approval of a clear conscience, the approving smiles of angels, and the priceless reward of well done from your God.

NECESSITY OF TESTING KEROSENE OIL.

BY GEO. R. HAYES.

EDITOR OF DENTAL TIMES—Dear Sir:—I thank you for the invitation to write for The Times. I do not think of any subject by which I could benefit the profession more at present than by saying a few words in regard to the mineral oils; the high price of alcohol having turned the attention of dentists in this country, universally, to them as a source of heat for vulcanising and for other office purposes. It is well known that petroleum, as taken from the earth, is a mixture of a great variety of distinct chemical compounds, varying in volatility from gas, dissolved in the oil itself, up to paraffine, a solid substance, as fixed as wax or any of the vegetable oils. To use these various compounds, very differently constructed burners are required. Some are made in which the most volatile portions are burned, the air being first mixed with the vapor, and then burned as gas. As a general thing, however, the burners for giving light and for heating purposes have been adjusted to an oil from which all of the very volatile compounds have been removed, known in market as kerosene oil.

Now, it is apparent that a burner which would be perfectly safe with the purified oil, up to the highest heat that could be raised by its flame, would be very unsafe with any of the more volatile portions, or with oil which had not been properly purified. If there was as great a demand for them volatile compounds as for the more stable ones, there would be no danger from this source; but, unfortunately, the demand for them is limited, while kerosene finds a ready market. Without rating against the cupidity of refiners, whose interest it manifestly is to leave in as much of these dangerous elements as they dare, it becomes an object of great moment that every person using kerosene should have ready means of testing its quality for themselves.

While thinking upon this subject, I happened to meet with the following extract from the Boston Journal, which seems to meet the want precisely. With oil such as I have used with the Aladdin burner, soldered into the top of the lamp, with a vent in the feed-stopple, near one side, I have been able to melt tin, and even to soften lead, but never to produce an explosion, or to get the lamp on fire outside, unless oil was spilled, and left on top of it. With this oil I have been experimenting to test the test itself. With water drawn from the pipes at about 60°, the lighted taper was instantly extinguished. When raised to 100°, it was also extinguished. Raised to 220°, the oil ignited readily in the cup.

I esteem this oil as perfectly safe in the dentist's laboratory; and with these facts, and the following test for good kerosene oil, every dentist may readily learn whether the oil he is using is suitable for his purpose or not:

"A SURE TEST FOR KEROSENE OIL.—The great number of serious accidents resulting from the careless use of kerosene oil, makes its explosiveness a subject of much importance. Three deaths have been caused by it in Lowell within a fortnight. The subject is now before the legislature of Massachusetts, and efforts are being made to enact a stringent law to prevent the adulterations now practiced. The testimony is very important, and reveals a simple and safe plan by which any of our readers may accurately test the danger or safety of oil before using it. Dr. J. W. Huntoon, of Boston, testified that good kerosene oil is not explosive to any dangerous degree whatever, but that it is only when it has an excess of benzine or some other explosive substance, that it becomes dangerous. The following test was given before the committee with perfect success, as showing the difference between oil sufficiently pure to be safe and that which is otherwise: Fill a tumbler three-fourths full of moderately cool water, and pour one-half of a tablespoonful of oil on it; stir it together; then hold a lighted match over it, and if it takes fire from the vapor before the flame comes in contact with the oil, it is dangerous, and ought not to be used, as good oil will not thus ignite, and will not burn readily even when a lighted match is thrown into it; but most of the adulterated oil will burn freely. All refined oil manufacturers corroborated this testimony."

PHENOL SODIQUE.

BY M. P. LINTON, M. D.

MESSES. EDITORS:—You ask me for something practical for the columns of your quarterly, THE DENTAL TIMES. Well, what shall it be? In looking over my journal of the past twenty-four years, I find much in its pages that might readily be worked up to readable, perhaps instructive But, upon reflection, I feel that I could probably render no greater service to the public in general than in calling the attention of the profession to the comparatively recent French preparation, captioning this article; having been favored by Messrs. Hance & Griffiths, of your city, agents for M. Bobœuf in this country, with a bottle of it, on its first introduction here, with a request that I would give it a trial, and report accordingly. But not being much of an enthusiast in "new remedies," I thought but little of it at the time. However, I brought it home, and placed it in my medical-case, with a purpose of complying with their request, should any suitable opportunity present itself. That opportunity was not long deferred. I accordingly made the application, and was so pleased with the results that I immediately determined to take it under more favorable consideration.

And it so happened at the time that quite a series of suitable cases presented themselves in rapid succession, all terminating, with scarcely an exception, in equally favorable results. The consequence of all of which has been, that, reasoning from its ascertained properties, the analogy of cases, of tissues, of causes and effects, I soon began to extend its use far beyond the enumerations announced in the programme of the proprietors, until—and especially so for the last two years—scarcely a day has passed that I have not had recourse to it, for some purpose, in some case, relation, connection or another; and that, too, with such marked and very general satisfaction, that I have at length began to regard it as one of the "professional essentials," and feel quite free to say that I know of but few articles in the whole materia medica that has a wider or more important range of application; and none, perhaps, that has so rarely disappointed my just and reasonable expectations.

And although a preparation much more pertaining to the province of the surgeon and physician than to that of the dentist, yet I presume there are but few intelligent dentists, once becoming fairly acquainted with its many and valuable properties, who would ever after willingly consent to be without it ready at their hand; even, in fact, if it were only for the single purpose of the almost magical relief to their patients of those "after pains" of extraction, so frequently scarcely less tryingly endurable than even the main operation itself, simply by wetting a small pledget of

cotton with it, and passing it into the cavity from whence the tooth we taken. And if so beneficial in the instance of a single tooth, how much more pricelessly invaluable in a case of extraction for a full set, where the alveolar processes are necessarily all laid open, and the gume unavoidably lacerated. Immediately relieving all pain and soreness arresting the not unfrequent hemorrhage, and continued as a mouthwash, by its peculiar and specific action causing the rapid absorption of the extravasated blood, and thereby preventing the usually attendant fector of the breath, so very annoying to patients in such cases; and finally, in speedily closing, healing and hardening the gums, no unimportant consideration, especially with that fairer portion of creation, who seem instinctively to have a very natural horror of a "speaking vacuum" in so obvious a portion of their "title-pages of beauty."

And this is but a single instance of its many phases of usefulness in the dental art. Yet amongst its other various and important applications. I will in this place essay to mention but a few, trusting, that the article once introduced, will be found amply able to fight its own battles, and "carry the victory to the end," readily suggesting, by its obvious properties, to the judgment of the observant and intelligent practitioner, the various and many cases and conditions to which it may very hopefully and beneficially be applied.

And firstly of them, from its pre-eminent hæmostatic properties, its application for the arrest of that peculiar and not unfrequently persistent hemorrhage in some constitutions—or perhaps, more correctly speaking, incidentally cachectic condition of the system at the time,sometimes following the extraction of a tooth, -in which case I have always preferred it to any of the ferruginous preparations, as it appears to be entirely free from any escharotic or irritating qualities; but on the contrary, especially sedative and antiphlogistic in its action,never having observed, on any one occasion, swelling or inflammation to have followed its use. And hence, from the same considerations, it being a powerfully antiseptic, I have likewise decidedly preferred it to creasote for the treatment of nerve-cavities, preparatory to fang-filling,in which class of cases I have as yet to meet the first instance that has been followed by any other than the most satisfactory results. And hence, also, from the same chain of reasoning, it will be found especially applicable to the management of certain cases of toothache, the which will readily present themselves to the judgment of the discriminating practitioner.

And secondly,—and perhaps by no means its least important service as a dental auxiliary,—its especial adaptation to the treatment of those instances so frequently presenting themselves in the operative-chair; I

refer to that class of cases of soft, spongy, swollen or ulcerated gums, bleeding upon the slightest touch of the instrument, invariably attended by a more or less offensive breath, and a tender, inflamed, and not unfrequently exceedingly sensitive, exposed dentine; cases that, to proceed with at the time, would be not only very decidedly unpleasant to the dentist, quite unbearable by the patient, and most absolutely impossible to conduct an operation to a successful and satisfactory termination. In such instances I always prepare a mouth-wash of the phenol, and dismiss my patient for a few days, with directions for its use.

Upon re-presenting themselves, I invariably find a marked and most decidedly improved condition of affairs to have been brought about, and the desired operation is readily proceeded with, with a pleasantness to the dentist, a comfort to the patient, and a final conclusion that would have been absolutely impossible of attainment under any other course of procedure.

In the same category, I might, perhaps, here note, not unfittingly, another class of causes of an unpleasant breath, (always an abomination to the operator,) and by no means a stranger to the dental-chair, arising from an ulcerated condition of the throat or diseased lungs; all of which are as speedily and effectually relieved by the simple inhalation of the vapor from the article in question, evolved from the bottle by the heat of the hand, taken through the ordinary inhaler; or, if you choose, "imbibed" from the spout of that common domestic institution, the old maid's comforter, yelept "the china tea-pot."

And thirdly,—and for the treatment of yet another item of our professional abhorrence,—that unfortunate, as most repellant of human afflictions, ozena, it absolutely has no compeer in the whole range of the materia medica, so far, at least, as our experience has yet tested.

While fourthly, and lastly, if I might jump to a conclusion from the result of treatment of the four cases of diseased antrum that have fallen under my care during the last two years, I might readily conclude it was just the ne_Lus ultra to that end,—as in each one of them the cure was alike painless, prompt and absolute; the first two having now been respectively of eighteen months and two years standing, and no symptom whatever in either case of a return having as yet manifested itself, I think they, at least, may be set down as "radically cured."

But of this enough for the present; and I would only further add, that I would earnestly recommend that every dentist should procure a bottle of the article in question for himself, and test it to his own satisfaction,—the best, perhaps, arbitrament after all.

NEWTOWN, Bucks Co., Pa.

DENTAL EDUCATION.

Read before the Delaware Association.

BT W. G. A. BONWILL, D. D. S

GENTLEMEN OF THE DELAWARE DENTAL ASSOCIATION:—In address, you, I have chosen the above subject as my theme, not so much for choice, but from necessity. No one of our number has heretofore touch upon it, and I have felt it really obligatory that something should be at to draw our attention to this all-important question. There are many practical subjects that should be taken up, which many of you might prefer, yet I shall attempt to deal with that of dental education.

For what purpose have we been meeting, and again meet here to-day Have we profited from former association? What have we done for the good of our profession? How many subjects have been taken up for essays and discussions? What improvements have been presented in consideration? Have we, individually, done all we could to further our science and make our Association respected? Have we, in any way. profited by our twice yearly visits to this room? Who of you, to-day. has appeared without something to mark the passing hour? Have you come to listen to Dr. C. or D., expecting every one else to read an esse; but yourself? Gentlemen are not here, certainly, without having made some preparation for our edification. I hope none of you have considered this to be merely a business meeting. No, may we all be agreeably disappointed with each other's conduct. If we have proper regard for ourselves as dentists, and desire to keep up and give character to these meetings, we must every one come with our hands and hearts full ci dental science; unless we have done so, or will give pledges of future usefulness, we had better disband. I, for one, do not wish to come to hear myself talk; would prefer it to be mutual. But if there are any here who consider that they have been benefitted from anything said or done, then I shall feel we have not associated in vain. I must confess, for one, that I have felt its influence for good. We have met face w face; have learned something of each other; are inclined to be more charitable. We now know who compose the profession upon this peniasula. We can the better gauge ourselves by having once met. Prejudice, once so prevalent, is, I hope, being fast obliterated. The feeble efforts I have made have been the means of awakening my mind to subjects that would, perhaps, have passed without a thought. If you have all been rewarded, as I conceive that I have, from the small amount of work done, you will vote with me to continue these meetings, semi-yearly, so long as we can muster a trio. No one has an idea, but he who has made the trial, what labor it is to take up the most trifling subject and transfer it to paper. You may not be so unfortunate as I in composition; I acknowledge it is a task, but the more I indulge and exercise my mind, the

task grows less, and each succeeding subject is the more readily digested and converted into manuscript. We cannot know what our abilities are, or the bounds of our knowledge, unless we endeavor to give vent to it verbally or by essay. If I can get an article in any kind of shape, after twice or thrice committing it to paper, I am well satisfied. I do not hesitate because I expect Dr. A. or B. to come out with a better production, or have what I have written criticised and picked to pieces by those present. If we are ignorant, the sooner we are made aware of it the better. We must not fear to open our mouths because of dreaded weakness. How are we to become strong, either in a mental or physical sense? By listlessness and inaction? No; exercise of mind is just as necessary for its development as that of the muscles, if we wish to become physically giants. By it new elements are added, while there is also metamorphosis of the old. Your wits will leave you unless cultivated. Nature has well established the law that there shall be no increase except by the "sweat of the brow." Knowledge will never be attained except at the expense of an effort. May I ask, in what other way are we expending our dental knowledge than by thus associating? Have we all the standard works? Are the best journals to be found upon our table? Any scientific journals? Have we a good selection of medical works? Have we paid due regard to a general library? Gentlemen, these are plain questions, but they are surely of vital import. It is needful that we should ask ourselves, what means have we at hand for the prosecution of our work? Our cases may be well filled with instruments, and the laboratory with everything requisite for the mechanical department, so far as tools are concerned, but what have we to assist in intellectual culture? Admitting there is much written that is not standard, not practical, there is enough to collect that is. If you should see that which you already know, and have been practicing, that need not deter you from further study and reading. It is a comfort to be assured that your experience and practice is correct. Should the author differ with you in some or many respects, do not condemn him, and set your judgment up as paramount. Never doubt until the proper test has been instituted. If we will turn to the literature of our profession, there will be found evidences of advancement. Unless the text books are to be found in our libraries, we must be counted as behind the times, and must for ever remain so. To have kept pace with it is as much as could be expected of some, but to have lurked behind is unpardonable. To practice dentistry, merely mechanically, will for everkeep its sphere of usefulness limited. To be sure, we cannot be superior operators without this very important talent. But there is, anatomically, physiologically and pathologically, so much involved in relation to the teeth with the economy, that mechanism alone will not suffice. It is not enough that fillings should be made solid, nor a denture be finely con-

structed; it is demanded of us to know that the ivory, upon which we are laying ruthless hands, is, to a certain extent, organized; that the sockets, alveoli, from which they project, is a part of the living body that their relation is such that one cannot be diseased without affecting the other. Nor is this enough; it is well to know the constitution of that tooth, its anatomy, the changes which it is liable to undergo if not properly treated, its low organizations, its little chance for recovery when diseased, compared to the softer tissues; how we are made cognizant of the position, nature and functions of the pulp, and, when found divested of its covering, how are we to distinguish between it and sensitive dentine? When we meet with the various colored caries, what is there to teach w the causes and govern our treatment? If abscess presents itself, are we to extract the tooth, or treat and endeavor to preserve it? If the pulp be exposed, shall we fill and trust to the mechanical forces for relief Do mechanics alone teach us the pathology of an abscess, or its treatment? Does it assure us of a cyst or sac, which must have its walls collapsed before cure can take place, and prevent further secretion: Upon what principle of the healing art is the fistula leading from that abscess to be treated? Will you tell me that no other knowledge is requisite but the mechanical, to enable us to practice our art to its fullest. bounds? No, I hope not. Again, take a simple ulcer, what have we w assure us that nitrate of silver is the thing for its treatment, or chloride of lime, or iodine, or iodine and creasote? Which of these will be most appropriate for the case! It may be that constitutional medication is requisite. Should the solution or application be mild or very strong, or whether any of these should be used? There may be a sequestrum, which, if removed, will alone conclude the cure. It may be a remaining fang. Then how are we to distinguish between it and the alveoli? These simplest cases are not to be treated intelligibly without a knowledge of anatomy, physiology and pathology. How much more difficult those aphthous ulcers, and others more formidable, where constitution is involved t How are we to draw the line of discrimination between the local and constitutional, or when both are playing equally upon the patient? Let us now look for a moment at the dentition stage. We are called upon to see a little sufferer; parents desire the gums cut. What guide or landmark is there to direct which teeth are being evolved, or whether they are in need of present attention, and are the cause in this case? we still say there is no call for dental education? Why, simple odontalgia cannot be subdued, in all its different forms, without it. What raised the surgery of to-day from its once barbarous condition, except the education of its practitioners, and its correlation with medicine? It was one day as degraded as our own science, and would still be, but for its association with the principles governing the human frame.

Mechanism deals with the inorganic world principally, or in organic where life force has taken its flight. The elements are so remodeled or combined as to be made a thing of action; but when applied to the human organism is certainly no longer mechanism, but involving physics. The more we study the spiritual or organic, the more elevated we become in the scale of social being, for we approach that much nearer to the divine. It is this that stamps upon the professional man a character that the world recognizes above the one who merely sees things mechanically. It is nevertheless true, that in our art an intuitive knowledge of mechanism is indispensable. No one can be successful in practice without it; neither can we be intelligent and respected in this department unless intimately associated with medicine. Every year am I more fully convinced that if we, as dentists, wish to be honored and respected, and retain the title of Dr., we must no longer rest satisfied with office tuition, but seek some medical or dental school. The colleges are the only sure means of giving us that status among men of science that we so much covet, or at least should. Gentlemen here may fancy that their five or ten years practice has placed them side by side with all others, and that schools are of no value to the old practitioner. You may say: "They will do for the beginner, but we have acquired all necessary knowledge, and our practice would not be any larger, or we the better therefor." Let me correct this error. If your practice were no larger, your patients would appreciate the effort, and be willing to pay you higher prices for the exercise of mind as well as that of the hand. If you are capable of improvement, it would do it. The contact alone with others would rub you up, unless you are rusty throughout. When our eyes are opened to look in upon that body, framed by such infinite power, and finger o'er that face divine, as it lays upon the dissecting table, and are made cognizant of its high organisation, even to that ivory, which we slay without a thought of its vitality of the adjacent structures, and of the large vessels that supply nourishment, and which, if cut, would prove fatal, we will stand amazed at our ignorance, and that our operations have not been more destructive of tissue and of life itself. Surely we are blest above all other surgeons: so many mistakes committed by the general surgeon, would result disastrously to him and his profession; erysipelas, pyemia, &c., the occasional sequels of even his educated hand, should oftener follow in the wake of uneducated dentists. Pause and think of the many abscesses that open their foul mouths to mark the skill of some ruthless operator; the wholesale destruction of one of our greatest ornaments, the human teeth, at the hand of him who knows little else than artificial substitution. Look at the malformed arches; the work of one who has never recognized dental education. Need I picture more alarmingly special cases to convince those present of the fallacy of practicing our art upon such

exclusive grounds as mechanism? We all feel, as we have added to our store of knowledge, just so much the more elevated above ourselves d yesterday; must not others have the same spirits, where they have been working their brain as well as hands? Is this gradation not among other avocations and trades, and are they not the more highly esteemed by thee who recognize the literature of their adopted calling? Is there one here, who, in the light of the dentistry of 1866, will persist in saying that mechanism alone is the grand pre-requisite to enable us to practice as is becoming the science of to-day? I hope not. As much as I leve mechanism—yea, almost worship it—yet I cannot make myself master of if without having recourse to scientific journals, and the association of those men who have cultivated this talent. To succeed in what we undertake, and make ourselves honored by the learned as well as by the common people, we must bring to our aid everything bearing in the least upon our profession or trade; and, gentlemen, if we have a desire to place our science where it belongs, we must consider it in the light of a profession, and nearly allied to that of medicine.

Among the many plans to be adopted to secure and establish success. we must always bear in mind that there is a standard quality of operations and artificial work, and there should be a standard valuation for the same. All should know what those standards are, and even make it their aim to bring their operations up and charge accordingly, and not by having picayune prices, and consequently permitting the skill displayed in the office and laboratory to be of equivalent worth. Skilled labor in every department of life is more highly treasured and valued in ratio to the standard. It is true, that there are cheap men and operatives in all branches of labor, whether of mind or body, or both, even that of medicine. we will find, as those members become more perfect from cultivation, the more they themselves will set a higher value on their productions. our present system of charges calculated to add anything to the status of dentistry? One has the reputation of being cheapest in the city or State; does that give him character? No; the public go, expecting the best is not to be had at that establishment; he values his own handiwork at a low figure, and so do they. If work equal to the standard is done, then other operators are undervalued and underbid; and, more than that, you debase yourself by not making sufficient clear gain to enable you to purchase those works and apparatus that will give you the intellectual culture that above all gives man his prominence above the mere machine. You have also more time given you whereby to improve the mind, by which means you are prepared to associate with the best men of your communities.

Those who do cheap, and I may consequently say inferior work, should not assure their patient it is of the best quality—equal to the standard—and thereby bring disgrace upon our useful profession; for when it is

tested and found wanting, all dentists are set down as humbugs, and more harm than good is done. Fillings should not be warranted to last a lifetime; the most perfect often need repair and refilling. I do think the public would be far more honestly served if we would but establish the system of charging high, and making our operations tally. There would be much less capital invested in artificial substitutes. The cost would be greater at first, but almost every tooth would be preserved. They would not need refilling as often, and artificial substitutes would seldom require to be inserted. We can attribute the great sacrifice of one of nature's most important organs to cheap dentistry. There is no denying the fact they are not only compelled to have substitutes inserted from failure in filling, but thousands will have splendid teeth extracted sooner than put up with the pain and paying for plugging which they know will not last long. They will tell you that artificial teeth are so much cheaper, and filling will not last. Would it not be better to have the former placed so high that they would prefer to retain their own teeth? Is not the tendency direct, that as you make the inducements greater by low charging, so will the natural teeth be held in lower repute. To have a set that will not ache or annoy, seems to be the ambition of those who have never been taught by their dentists to value their own. It is so much easier to insert a plate than to thoroughly fill, that cheap operators resort to it without a second thought. And, after all, how do most of the cheap sets fit? Not well, as a general rule. And how are they arranged and articulated with each other? Mostly thrown together without artistic taste. To make them as they should be cannot be done without devoting a certain amount of time thereto: and that time is to the good operator worth so much. He who is true to conscience will never sacrifice a tooth that can be made useful! Do let us see to it that we will from this time forth resolve to retain and not slaughter these too little appreciated organs. There is nothing we do more disgraceful and unbecoming a profession. As I have before stated, and now repeat, the best means of prevention is education.

This fact established, the next question is, which should be patronized, medical or dental schools? I have no hesitation in saying that he who expects to devote the whole of his energies and talents to dentistry, should by all means attend the courses required by our dental institutions; they are not mere catch-pennies, but necessities of the times. He who wishes to encroach more on general medicine and surgery, should by all means attend one course in a school specially devoted thereto. The inducements in dental schools are so great that every one should give heed; they have done a vast amount of good; have done more to elevate us, or rather the profession, than all other means that have been adopted. To those who have been in full practice since 1852, the Pennsylvania College (old school) grants the privilege of coming up for graduation without having

attended upon the lectures, if, upon examination by the Faculty, they are found worthy and competent for that degree.

You may think this an unwise step; too broad a door opened for legalizing quackery; a too hasty way of manufacturing D. D. S.'s. But let me differ with you; will it take in all who apply? No! not by hundreds. If so, there would be little necessity for college tuition. It is only intended for those few who have not been idle in prosecuting their education while in full practice; who have endeavored to make themselves conversant upon all the leading topics of the hour, and whose increasing duties would not well permit their absence to attend the course as it should be. The time, 1852, was when the school was first inaugurated; they could not go back any further. Besides, thirteen years is no more than an equivalent to one full course; and, with those who have not profited by practice, even this tong time will not carry them through.

This is not intended as an honorary degree, but to simply place them, as worthy members of our art, on a footing with all graduates. The progress of dental surgery has been such, that if we would rank among the honored, we must be born in some medical or dental school. It is just and right it should be so. I have long felt the sting of this desideratum; hence my attendance upon a full course at the Jefferson Medical College during the past winter. In the meantime the above offer was tendered, and I hastened to place myself before the Faculty, not knowing what would be the result. My advice is, go and attend the lectures of either the medical or dental school, and try for the "sheepskin," I was going to say, but will amend—honorable degree. I do not care how well posted a practitioner may be, a course will be of no disadvantage.

The question here might arise, is a diploma from the Pennsylvania College worth the parchment upon which it is written? We might suppose that "there was something rotten in Denmark," or why should a new school spring up in the same city? What has given rise to this movement? Could not the old school accommodate more than seventy-five? or did it fail to meet the requirements of the profession? or was it from some personal disturbance among the professors? What reason for another school, for, say one hundred matriculants? the accommodations must have been very poor at the old school, if they could not have taught three hundred. If this had been the case, I can see the policy for another school in the same city. As it is, I think it a disadvantage to both. It has always been a "labor of love;" for we all know it could not have paid a single professor. Would it not have been much better if the one school could have had at least two hundred matriculants, so that there could have been something in the treasury from which to draw for purchasing apparatus and extra material for embellishing the lectures, and making them not only more attractive but more instructive? Is it not

more probable that, instead of the teachers becoming lukewarm in the service, they would have had ten-fold extra inducements for building up the reputation of their school? How would any one of you feel, if, after having succeeded in a good paying practice in a community where only one dentist was required, another was to locate to divide the spoils, on the plea if one is doing well, why cannot two? If you were not doing the best work, and he came nearer to what an operator should be, then there would be a just excuse. If it be claimed that this was the origin of the new school, then I say let us have it, and break down the old. But, on the other hand, was it because one or more therein could not warp everything to suit themselves, and sooner than not rule would ruin? I hesitate not in saying that the old school should have our sympathies until she proves herself more unworthy than the founders of the new, in their arguments for their charter, gave against her, in favor of themselves. The sole claim was, that the medical schools of Philadelphia were more prosperous, and turned out better classes than when but one school existed. No one can grant that we have a better set of physicians now than when there was but one school; for in this movement the standard and requirements were lowered. With them there was more cause for an extra school; but with us the number of students were not sufficient to make it an object with the teachers to labor with the same assiduity as if the number had been four-fold. As I have before remarked, their great love for the profession, and a strong desire for its elevation, has led them to devote their time, talents and means for the good of the few who have honored them with their presence. I do not take this position because I am a graduate of the old school. No! my sympathies were with the new. Far be it from me saying one word against a single professor there. No, I cannot, for they are able men; yet not any more so than those in the mother school.

Could there be found any good reason for this difference, or rather multiplicity of schools, then I would have you attend the opening lectures of each, and decide for yourselves. As it is, I must say sustain the old, yet not decrepid institution.

A few words more, and I will not longer hold your attention. Very great deal more might be said in reference to this most vital question; but let these few thoughts suffice, hoping they may turn your minds to reflect thereon, and enable those who are truly in need to go forth from this place resolved to prosecute their profession, not merely mechanically, but with the assistance of medicine and the collateral sciences; never losing sight of the fact that, if we desire to be called Drs., we should not bring this prefix into disrepute by practicing dentistry merely as a trade, but as a profession; and that this only can be done by making use of every means set before us for our education.

OBITUARY.

Drowned in the St. John's River, Florida, on the 4th of April, D. C. Ambler, M. D., dentist.

It is a sad duty to record the sudden death of a so highly respected and beloved member of the profession. Dr. Ambler practiced for many years in the city of New York, but for the last few years has resided in Florida. His circle of acquaintances was large; and men of education, refinement and worth, were numbered among his most intimate friends. Like all good and useful men, he had a few enemies; but they were chiefly, if not solely, of his own profession,—envious of his reputation and success.

He was a favorite pupil of the venerable Dr. Valentine Mott, and graduated at the College of Physicians and Surgeons of the City of New York. His love of mechanics and chemistry, aided by an inventive and fertile mind, enabled him to make rapid advances in dental surgery, which he chose as a specialty. He was awarded in the year 1833, by the American Institute, a gold medal for artificial mineral or porcelain teeth,—the first awarded, it is thought, for any manufacture. He then gave an impetus to this important and growing branch of dentistry,—the growth of which has been so rapid that it has become a specialty, giving employment daily to hundreds of busy hands. Sickness in his family called him away from this field of usefulness to another in the sunny South, leaving to others the laurels and riches which he truly merited.

I had the pleasure of meeting him in New York last fall, when on a visit from Jacksonville. On that occasion he entertained me with an account of the many difficulties encountered by the early plodders in the field of dental surgery, giving a history of his travels through the South, with a few incidents in the practice in this country of the now famed Dr. Brewster. I little thought then that it would be the last time that I should look upon his pleasant and genial face, the last time that I should listen to his cheerful and instructive conversation. Truly, "in the midst of life we are in death!" He was a sincere Christian, a member and communicant of the Protestant Episcopal Church; and those left behind, mourn for him not as those without hope, for having finished his course in faith, he now rests from his labors.

At a meeting of the Society of Dental Surgeons of the City of New York, held at their room, No. 24 Cooper Union, on the evening of the 25th of April, 1866, the death of D. C. Ambler, M. D., dentist, was announced to the meeting, when, on motion, a committee of three was appointed by the chair to draft suitable resolutions of the exemplary character and exalted professional worth of the deceased.

The unexpected close of an eventful life in a career of enterprise and usefulness cannot fail to arrest the attention of the most thoughtless, and shroud an appreciative community in the deepest gloom. Such was signally the case when the startling intelligence of the sudden death of Dr.

D. C. Ambler, by drowning, on the 4th of April, in the St. John's river, Florida, reached us. In Dr. Ambler we recognized an old familiar friend and professional brother, whom we all delighted to honor while living, and now sincerely mourn his death. Dr. Ambler was one of the pioneers in the profession of dentistry; one who labored hard to elevate the standard of professional excellence; and the science and art of dentistry was materially advanced by his scientific knowledge and ingenuity; and to his experimental researches is our profession indebted for those improvements in mineral teeth, the manufacture of which has been carried on so extensively and with such perfection in this country; therefore be it

Resolved, That this Society show its affection for his many virtues and appreciation of the bright example of our departed friend and brother, by placing on record these expressions of our bereavement and sorrow for his

departed worth.

Resolved, That our sympathies, true and heartfelt, are hereby tendered to the relatives and friends of the deceased in this sad and inscrutable

dispensation of Providence.

Resolved, That Dr. John Gardner Ambler, one of our members, and nephew of deceased, be requested to address the profession at such time and place as may be convenient to himself, in an obituary or eulogy of the deceased.

Resolved, That these proceedings be published in one or more daily papers of this city, and in the different Dental Journals.

All of which is respectfully submitted.

T. H. BURBAS, JOHN ALLEN, CHAUNGEY F. FITCH,

AMALGAM FILLINGS.

MR. EDITOR:—Amalgam fillings, which, in ninety cases in one hundred should be removed, or rather should never have been put in, have given me more trouble than any other one thing in the practice of my profession. There are two general causes for their use: empirical practice and the poverty or disinclination to compensate on the part of the patient,—the former the more frequent. The latter should never or seldom be allowed to influence a dentist who has his own reputation and the honor of the profession at heart; for I lay it down as a rule, having its exceptions, (though very few,) as all rules are supposed to have, that an amalgam filling will not preserve a tooth. In deciduous molars, when the nerve has been destroyed and removed, or in old posterior shells, with clean and healthy fangs, where it would cost from thirty to fifty dollars to fill with gold, it might be occasionally permissible; but only in such cases should the "stuffing" be used.

Cases innumerable have come to me in the past two years,—patients of other dentists,—with incipient or confirmed abscess from teeth filled with amalgam. In some instances the nerve had died after filling; in others, the nerve had previously been destroyed; and still in others, only an

attempt or presence had been made at the removal of the pulp. But when the fangs have been thoroughly cleansed, this filling will not perfectly preserve the tooth; for an amalgam filling will contract and draw from one or another part of the walls of the cavity; and if this should take place at a point inaccessible to the brush, the fluids of the mouth, lying in the crevice, decay, though in some instances slowly, yet surely will progress.

My chief object in this communication is to inform those who do not know it, of a means whereby to easily remove such fillings; for doubtless all respectable dentists have many such cases as I have described above. I formerly, if the tooth was only sore from periostitis, drilled a small opening into the pulp-cavity, (and oh, what a horrible stench would then come forth,) waited a few days for inflammation to subside, then cut, bored and chiselled out the trash, with hours of sudorific labor. I now take an old rose-head drill or chisel, have my spirit-lamp at hand, heat the instrument hot, and cut out the amalgam like old cheese.

Since writing the above, Mr. Editor, a thought occurred to give you my mode of annealing gold for plugging. I find it superior to any mode I have seen. I take a piece of thin mica, three to four inches square, a handle made of two narrow strips of glass, united by liquid silex: on this I place my pellets, (the amount I require for each tooth,) heat them carefully over the spirit-lamp, when they will be found to work perfectly. By this mode, time is saved over that of passing each piece through the flame; uniformity of annealing is secured; no gold is burned; alcohol is saved, and the temper of your instruments is not drawn.

Very respectfully, yours,

OCCIDENTAL.

BROOKLYN, June 11th, 1866.

AMERICAN DENTAL ASSOCIATION.

The Sixth Annual Meeting of the American Dental Association will be held in Representatives' Hall, State House, Boston, Massachusetts, com-

mencing Tuesday, July 81st, 1866, at ten o'clock, A. M.

Arrangements have been made with the proprietors of the Revere and Tremont Houses to give extra accommodations to the members to the number of one hundred and seventy-five or two hundred. Those desiring to engage rooms in advance, can do so by addressing the undersigned, stating the style of room—single or double—or rooms, with expected time of arrival. In this way, parties can arrange to be near one another. These hotels are first class, and central.

No special invitations to operate at the clinic have been given. Those willing to operate are requested to come prepared. It is intended to have twenty or more chairs, so that a large number can be operating at the same

time.

Some embarrassment has been experienced at previous meetings by delegates coming without credentials. In one case, the Secretary came with a certified list of a dozen or fifteen names of those whom his Society had elected as delegates. Less than half of these attended—part coming at

the opening of the session, and others on subsequent days; still others presenting themselves as substitutes. As each man appeared, the Secretary's report of the election had to be hunted up. To simplify and expedite this business,—which at best causes delay in organizing—the Committee on Credentials recommend that each delegate be provided with a certificate to that effect, signed by the President and Secretary of his Society, or one of them.

The profession in Boston and New England will give the Association a

hearty welcome. Let us have a full attendance.

L. D. SHEPARD, Salem, Mass., Corresponding Secretary.

Bditorial.

INSTRUCTIONS IN THE PREPARATION, ADMINISTRATION AND PROPERTIES OF NITROUS OXIDE, by Prof. G. T. Barker. This is the title of a small treatise of sixty-one pages, published by Rubencame and Stockton, in which the writer gives a very clear and concise explanation of the apparatus for, and the preparation of nitrous oxide, the mode of administration and its chemical and physiological properties, and cases in which it is contra-indicated. This work should be in the hands of every one who administers the gas. We can recommend it as reliable in every way.

T. L. B.

WE ARE under many obligations to Dr. L. Buffett, of Cleveland, for a very fine specimen of secondary dentine; also a tooth that had been displaced from its socket, by a kick from a horse some fifteen years previous to its final extraction. It was re-implanted by the individual without the usual precautions considered necessary in such cases, and performed all the duties of mastication during that period equally with its fellows.

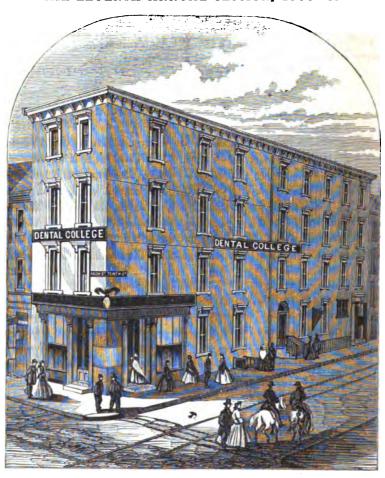
Our thanks are also due to Dr. H. S. Noble, of Owego, N. Y., for an inferior cuspidati with two fangs. We are also indebted to Dr. F. A. Ramsey, of Norristown, Pa., for several specimens of teeth presenting abnormal conditions.

THE AMERICAN DENTAL CONVENTION will meet this year in the City of New York, on the first Tuesday in August. As this meeting is open to all dentists, we anticipate a large gathering. The discussions are free for all to participate, and from the interchange of opinions much good results.

Since our last number we have received, from the Secretary, the transactions of the Connecticut State Dental Association, for 1864—'65. They are printed very neatly, making 102 pages. As they have been nearly all published in the Dental Journals, the reading portion of the profession has had the benefit of their perusal.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE ELVENTH ANNUAL SESSION, 1866-'67.



TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., ELLESLIE WALLACE, M. D., BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S.,

S. DILLINGHAM, D. D. S., G. R. MOREHOUSE, M. D., THOMAS WOOD, CHARLES HAMILTON, SEC'Y.

PACULTY.

J. D. WHITE, D. D. S., EMERITUS PROFESSOR.

T. L. BUCKINGHAM, D. D. S.,
PROFESSOR OF CHEMISTRY AND METALLURGY.

E. WILDMAN, M. D., D. D. S.,

PROPESSOR OF MECHANICAL DENTISTRY.

G. T. BARKER, D. D. S.,

PROFESSOR OF PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS

W. S. FORBES, M. D., D. D. S., PROFESSOR OF ANATOMY AND PHYSIOLOGY.

JAMES TRUMAN, D. D. S.,
PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIVE DENTISTRY

J. M. BARSTOW, D. D. S.,

DEMONSTRATOR OF MECHANICAL DENTISTRY.

The Lectures to the Regular Course commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the C	ourse, (Demonstr	ators'	Ticket in	cluded,)	-	\$100
Matriculation,	paid but	once,)	-	-	-	-	5
Diploma Fee,	-	•	-	-	•	-	30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janiter. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eleventh Annual Session, 1866-'67.

The eleventh annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the 'different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

COURSE OF LECTURES.

OHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can be performed before the class.

DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration.

At the Clinic the incumbent of this chair will also demonstrate before
the class the various operations described in his course of lectures.

MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissecting room in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College. Also satisfactory evidence of having been in practice five years, inclusive of the term of pupilage, will be considered equivalent to the first course of lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

Candidates for graduation who have not attended lectures.—Dentists who have been in continued practice since 1852 are eligible to be candidates for graduation without attendance on lectures. The candidate for graduation must present satisfactory evidence of his having been in practice for the allotted time, also of his good standing in the profession, he must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must undergo a satisfactory examination by the Faculty, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. Of this class of graduates, the matriculation and diploma fees only are required.

TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

WATERCULANTS.

NINTH ANNUAL SSSION, 1865-'6 6.

J. P. Adams,New York.	H. W. More,	Pennevivania
Stephen Anmas,Oube.	I W Noless	Tennesse.
G. K. Bagby,Virginia.	Henry 8. Noble,	New York.
J. M. Barrett,Pennsylvania.	W. Pellett,	Illinois.
Edward Bedloe,Pennsylvania.	Casimer del Portillo,	Cuba.
Henry Berhard,	W. B. Race,	New York.
E. M. Boosley,Now Jersey.	F. A. Ramsay,	Pennsylvania
T. H. Bradfield,	H. C. Register,	Maryland.
W. G. A. Bonwill,Delaware.	John E. Register,	Marvland.
F. A. Brewer,	Louis Jose Salicrup,	Porte Bice.
Samuel C. Britton,Maryland.	Peter Schembs	Pennsylvania
Charles Buffett,Ohio.	W. Smedley,	
P. M. Christie,Pennsylvania.	H. J. Smith	
R L. Cochran,	C. W. Strang,	New York.
Wm. H. Crary,New York.	James Tait	Pennsylvania
Frank Darby,	James Tait,	Maine.
8. C. Dayan,New York.	James 8. Thomas,	New York.
Edw. S. Davenport,New York.	isador Tolon,	Cuba.
Timateo P. Dias,Cuba.	John R. Thompson,	8. Carolina
Francisco Dominguez,Cuba.	A P. Tompkins,	Pennsylvania
E. C. FlamandCubs.	Wm. H. Trueman,	
Hamilton Forrest,Maryland.	J. J. Vanderford,	Marvland.
Simon Frau, D. D. SCuba.	Ametin de Verone	Cube
Rafael Gonzales,	Agustin de Varone,	New York.
Asher B. Greasemer,Pennsylvania.	Francis Vega,	Porto Rice
Albert HapeGeorgia.	Erastus Walker,	New York.
L. B. Henderson,	Rencom Walker	
J A. Houser,Pennsylvania.	W. H. Walker,	Wisconsin
Milton Kelm,Michigan	Wm. O. Wardlaw,	8 Carolina
A. Lawrance,	J. B. Wheeler,	New York.
W. K. Lineaweaver,Pennsylvania.	O. N. Whitney	Illinois.
Thomas F. McClure,	Wm. Williamson,	Pennavlvania
Daniel Martin	E. Wilson,	New York.
Mariam Martorell,Porto Rico.	J. H. Winslow,	
Francisco Mignotte,Cuba.	J. 22	
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## **GRADUATES, 1865-'66**

John P. Adams, New York, Salivary Deposits.  George K. Bagby, Virgi nia, Nitrous Oxide.  Hanry Berhard, New York, Qauses of Carles.  Thomas H. Bradfield, New Jersey, Inflammation  Francis A. Brewer, Missouri, Dentistry a Science.  Samuel C. Britton, Maryland, Predisposing causes of Carles.  Oharles Buffett, Ohio, Arsenic.  Perley M. Christie, Pennsylvania, Inflammation.  William H. Crary, New York, Bubber versus Metal.  Edward S. Davenport, "Iodine.  Franciscus Domingues, Ouba, Inflammation.  Engene C. Flamand, "The Art of Filling Teeth.  Hamilton Forrrest, Maryland, Decay of the Teeth and Treatment  Albert Hape. Georgia, Dentistry a Science.
George K. Bagby. Virgi nia. Nitrous Oxide. Hanry Berhard. NewYork. Causes of Caries. Thomas H. Bradfield, New Jersey, Inflammation Francis A. Brewer, Missouri, Dentistry a Science. Samuel C. Britton, Maryland, Predisposing causes of Caries. Charles Buffett, Ohio, Arsenic. Perley M. Christie, Pennsylvania, Inflammation. William H. Crary, New York, Bubber versus Metal. Edward S. Davenport, "Indiammation. Edward S. Davenport, "Indiammation. Eugene C. Flamand, "The Art of Filling Teeth. Hamilton Forrrest. Maryland Docay of the Teeth and Treatment
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William H. Orary,
Edward 8 Davenport,
Engene C. Flamand,
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Hamilton Forrest
Alle-Alle-Ann a Galance
Albert Hape, Georgia,
John A. Houser, PennsylvaniaTreatment of Exposed Pulp.
Milton Keim,
Washington K. Lineaweaver, PennsylvaniaInflammation.
Francisco Mignotte,
James W. Nelson, Tennessee,
Henry S. Noble, New York,Antrum Highmorianum.
Francis A. Bamsay, Pennsylvania,Sensitive Dentine.
Henry O. Register, Maryland, Digestion.
Louis Jose Salicrup,
William Smedley, Pennsylvania, The Fifth Pair of Nerves
Henry J. Smith,
James S. Thomas, New York,
William H. Trueman,
Agustin de Varone, Cuba, Development of the Teeth.
Julien J Vanderford,
John H. Vedder, New York, Treatment of Irregularities.
Ransom Walker,Diagnosis.
William C. Wardiaw,
John B. Wheeler, New York, The Dental Pulp.
A. Lawrance, Mass,
J. M. Barrett, Pennsylvania. } In practice since 1852
A. Lawrance,
Number of Patients visiting the Clinic, during Session of 1865-'66,
Number for whom operations were performed.
Number of Pillings put in.
Number of Teeth Mounted for Patients,

## DENTAL TIMES.

Vol. IV.

PHILADELPHIA, OCTOBER, 1866.

No. 2.

## ON PROTECTION FROM MOISTURE IN DENTAL OPERATIONS. BY DR. WILLIAM G. HORNE.

The prevalent practice of the present day, which gives the preference to adhesive preparations of gold over non-adhesive foil, occasions a demand, greater than ever, for some means by which the dental operator may undertake the filling of teeth in the most watery mouths without fear of an inundation, however lengthy the operation. Adhesive gold in some of its forms being accepted as the sine qua non, it follows that its use should be as extensive as possible. One obstacle to this, which is often quoted, is the impossibility of keeping some cavities dry, and this objection, if valid, is a fatal one, for gold cannot be welded in the presence of moisture. The conclusion generally arrived at under such conditions is, that gold fillings had better be inserted a little wet than not at all. Of the poor results of such operations, only tolerated as the lesser of two evils, we have frequent evidence. Even while to the superficial observer an appearance of safety and solidity is kept up, decay progresses, until the filling breaks down to be replaced by another probably of the same class; that which should have afforded permanent security to the tooth proving only a temporary check to decay. A variety of means are ordinarily resorted to for suppressing or damming the saliva and mucous secretions, as napkins, cotton, bibulous paper, spunk, wedges of wood. These, if carefully applied and watchfully guarded, with the aid of duct compressors, saliva pumps, tongue and cheek holders, generally contribute to a more or less favorable result, but frequently they prove totally inadequate.

There is a means of great simplicity for controlling the worst cases of superabundant flow of saliva, applicable to almost any tooth. It consists simply of a sheet of elastic rubber, known commercially as bandage rubber: in this holes are cut for the passage of the teeth to be protected, which are thus isolated by a water-proof curtain, keeping them perfectly dry at pleasure. The credit of originating this application is due to Dr. S. C. Barnum, an ingenious and skillful dentist of New York, who first used and made it public three years ago. Since then it has commended

itself to the favor of a large number of the leading dentists of this city, who consider it an invaluable improvement.

In its application there are a few points learned by experience, which may be of value to experimenters. The rubber must be newly made, of good quality, that will bear a severe strain without tearing; in thickness about three times that of ordinary writing paper—a piece 5 by 8 inches is large enough for any case, much less will frequently do. The size of the holes should be about one-tenth that of the teeth they are intended for these may be made by stretching the rubber over a point of wood, which is then cut off with soissors, leaving a clean cut round hole; sometimes a simple perforation may be sufficient. Of course the same piece may be used in a number of cases it captis the removing it that it be not torn; also, let the hole cout near one side intend of the middle of the sheet, as being economical of material and of redm in the mouth, leaving the larger part of the curtain externally dependent. One or more teeth on either side of that to be filled should always be included; where the crowns approximate closely as eighth of an inch left between the apertures in the rubber will allow for the greater space at their necks and for tension; where they stand apart, a greater allowance must be made. rubber is carried to its place between the teeth to their necks by means of waxed floss silk; its application to back teeth may be facilitated by securing one end of the thread in a file carrier, which may be used in the mouth, while the other end is held by the fingers. The lip of the rubber must be carefully worked under the free edge of the gum toward the root. This is an important point, for if the tooth be hugged ever so tightly, with the lip directed toward the crown, leakage will be inevitable. Should it prove difficult to pass the silk and rubber between the teeth, start then apart with the wedge, which may be done on the instant, but this is seldon necessary. The natural contour of teeth will often retain the rubber in position, but if this prove insufficient, a silk thread around them, interlaced from one to another, close to their necks and tied in a knot, will effectually prevent its slipping off.

If the crown of a molar decreases in size towards its summit, let a waxed silk thread be tightly knotted around it, close to the gum; slide the knot backward to the posterior aspect of the tooth, and bring the ends through the hole prepared in the rubber; by drawing the ends in opposite directions the aperture is distended, the rubber may be carried to its place, and the knotted thread drawn above or below it, (according as the tooth may be inferior or superior;) this will hold long enough to secure another thread around the tooth and its neighbors. In putting the rubber over any teeth begin with those anterior, and work backward, and in tieing on the rubber, reverse the order of procedure.

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An objection is found in the dark color of the material; it is hoped that some of a lighter hue will soon be obtained from the manufacturers. In the meantime, a piece of paper conveniently placed will prevent the absorption of light, or aid by its reflection.

It is hoped that these general outlines will prove serviceable. The arrangement in detail must be left to the ingenuity of the operator. The method presented has proved so valuable in many hands, that it is earnestly commended to the profession, with the injunction not to be discouraged if not immediately successful in all cases. It will improve with better acquaintance.

NEW YORK, September, 1866.

PROH.

In two previous numbers of this journal, we have given a short description of the ores from which iron is obtained, and an outline of the process of reducing these ores. But the iron that is obtained by this first process is not pure enough to be rolled or forged. It is called pig or cast iron and contains from six to eight per cent. of carbon, silicium, phosphorus and sulphur; as these two last substances injure the iron very much, they are got rid of, as much as possible, in roasting the ore and reducing it in the furnace. In order to reduce cast to wrought iron it is necessary to remove from it the carbon and silicium which it contains. To do this the cast iron is melted, and the air is allowed to play over the surface. This oxidizes it very rapidly, and the oxygen coming in contact with heated carbon combines with it and forms first carbonic oxide, and then carbonic acid, which passes off in the form of gas. A portion of the oxide of iron combines with the silicium, and forms a fusible glass which floats on the surface. In order to expose the whole of the iron to the action of the oxygen, it is stirred from time to time. The melted iron is at first very fluid, but after a time it becomes stiff, and finally a doughy mass, when it is rolled into balls on the floor of the furnace and carried from there to the hammer, where it is welded into a solid mass, and from the hammer it is carried to rolls and pressed into bars.

Steel.—There are two processes of manufacturing steel. The first is to partially deprive cast iron of its carbon, and the other to first reduce the cast to wrought iron, and then carbonize it again. For the first process none but the purest cast iron can be used, such as is made in some parts of Germany from the richest ores, and even then the steel is not of the finest quality. The process consists of burning out a certain portion of the carbon, for cast iron contains too much carbon to be used for steel. The furnace used is shallow, and the blast is not blown in at the bottom, but some

distance up. The fuel used is charcoal. A fire is made, and a plate of cast iron is placed on it, standing vertically, with a portion of rich scoria and scraps of iron; these contain a large proportion of oxide of iron. When the cast iron first melts it is very fluid, but the scoria oxidizes it and deprives it of its carbon which renders it doughy. Another piate of cast iron is melted with it, and this is repeated until the workman judges the mass to contain enough of carbon to make steel. During the process, the fuel being above and the blast not striking on the melted metal, it is not oxidized as it would be if exposed to the air: for exposed to the air the metal would be so much oxidized that the whole of the carbon would be burned out, and reducing it to wrought iron. When the operation has been carried far enough, the steel is gathered into small wedge-shaped pieces, which are carried to the hammer and forged into bars about two inches square; these are, while hot, plunged into cold water so as to harden them. They are then struck across an anvil to break off the hardest portion. These are gathered together and melted, run into ingots, and then forged into bars, while the portion that is too soft is added to other cast iron to be more carbonized. To prevent the steel from being oxidized during the process of refining, a portion of clay is thrown on it, which, combining with the oxide, forms a very fusible glass; this floats on the top and prevents further oxidization. Steel made in this way is called native or forged steel. It is only fit for making large and coarse instruments.

A process of converting cast iron into steel, without the use of fuel, is proposed by Mr. H. Bessemer; it consists of forcing air into the bottom of a melted mass of cast iron and allowing it to bubble up through it. The oxygen of the air combines with carbon in the iron, which gives out heat enough to keep the mass melted. As the iron becomes deprived of its carbon a portion of it is oxidized; this oxide combines with the silicium which the cast iron contains and removes it from the steel. By this process cast iron can be reduced to hard, then soft steel, steely iron, and finally soft iron.

The process by which good steel is made, is called cementation.

Bars of the best iron, from 1½ to 2 inches wide, and from ½ to ½ an inch thick, are placed in boxes in a furnace built for the purpose. These boxes are built of refractory brick, and are 7½ to 15 feet long, 2 feet wide, and as many high. They are charged by first covering the bottom about 2 inches thick with a cement composed of powdered charcoal, with about 1-10th its weight of wood ashes, and a little common salt. Then the bars of iron are arranged edgewise, with about ½ an inch space between them, until the bottom is covered, when the powdered cement is sieved between and over the bars, covering them about ½ an inch thick; another layer of bars and cement is placed on the top of the first, and so on until the box is

IRON. 53

filled to within 6 inches of the top; it is then covered with sand and refractory brick, and sealed up perfectly tight. Two of these boxes are usually built in a furnace; they will hold from 10 to 20 tons of iron. Each box has several holes in the end opposite the opening in the walls of the furnace, through which some of the bars can be withdrawn to examine their progress. The temperature of the furnace is about the fusing point of copper. It takes about twenty-four hours to raise it, and it is kept up for seven or eight days.

The carbon at this high temperature combines with the iron, and converts it into steel. The surface of the bar, when taken from the furnace, is covered with blisters, and the steel is then called blistered steel. But the bars are not equally carbonized through; the surface is very hard, while the centre is scarcely carbonized at all, and hence this kind of steel can only be used for common instruments.

In order to render the steel more homogeneous, the bars are cut into short pieces; a number of these are bound together, welded and forged into bars; this forms shear steel, but as it is impossible to thoroughly mix the soft and hard parts together, this steel is not fit for making the finest instruments.

To render steel perfectly homogeneous, the blistered steel is melted in a crucible, and run into ingots, and then forged into bars, drawn into wire, or rolled into sheets. The steel during the melting is kept covered with a fusible glass to prevent it from loosing its carbon.

Wootz, or Indian steel, a very superior steel manufactured in India, is supposed to derive its excellent properties from combination with a small quantity of aluminum and silicium. It is made by heating iron to a very high temperature in contact with certain vegetable substances. It has to be remelted to fit it for making the finest instruments.

Efforts have been made to improve the quality of steel by alloying it with other metals, such as silver or platina, but it is doubtful whether steel can be improved by alloying.

Steel is a combination of iron with carbon, and a very little silicium and phosphorus. According to an analysis made by Gay Lussac, it is composed of iron 99.24, carbon .65, silicium .04, and phosphorus .07 in 100; so that the whole of the other elements, combined with iron, is less than 1 per cent. When it contains a larger proportion of carbon, it becomes too hard to work and is very brittle. The appearance of good steel when broken, is of a uniform almost silvery whiteness. The quality is sometimes tested with dilute nitric acid, which in good steel should produce an uniform gray or blackish color; but if some parts are harder than others, the color is not uniform but mottled or striped. The Damascus sword blades were supposed to be made of different kinds of steel, and colored in this way.

Case hardening is done by making the article first out of soft iron, and then covering it up with some carbonaceous substance, and heating it to redness, and keeping it in that state for a length of time—the carbon combines with the iron and converts the surface into steel.

# DENTAL SURGERY—SHOULD FEMALES PRACTICE IT? BY MISS L. JENNY KELLOGG.

Explanation.—In the April number of the Dental Times, Vol. III., No. 4, appeared a communication by Dr. Geo. T. Barker, with the above title. Exception being taken to the views there enunciated, an article with the same title was received by the publishers in reply. The first three pages of the manuscript were returned to the authoress for a slight alteration, and have not been received in time for publication. As the part we publish refers more particularly to the question of difference and interest, should females practice dental surgery? we have thought it best to make this explanation, and commence Miss Kellogg's essay in rather an abrupt manner, in preference to allowing the whole article to remain over to a subsequent number.—Ed.

The doctor says: "the very form and structure of woman unfit her for its duties;" referring to the practice of dentistry. This I most emphatically deny, and think it would puzzle any one to prove it.

He also dwells upon the great danger attendant upon the practice of dentistry during pregnancy and nursing, as well as the neglect of family, which he seems to think must inevitably follow. So far as the neglect of family is concerned, that cannot affect unmarried ladies, and I am personally acquainted with several such, so I know they do exist. reference to married ladies neglecting their families, I consider that an individual matter, with which outsiders have no right, either legal or moral, to interfere, and presume that the efforts of one who should do so would not be appreciated. But to the physiological effect of practice during pregnancy. That Dr. Barker is in error here, I am fully convinced. We little know of what woman is capable. We do know that among savages, or even the German women of our own United States. pregnancy is not attended with enough inconvenience to hinder work. What proof have we that this training of the muscles is necessarily at the expense of the mental forces? That it is so to a great extent, I admit, but that it is a law of nature we have enough exceptions to disprove; indeed, it is a libel upon nature to admit it.

Trying as the practice of dentistry must be acknowledged to be by all who have ever practiced it, a pregnant woman may practice it with less danger to herself and child than she can the duties which in the present

state of society devolve upon one-half, if not nine-tenths, of laboring women in such conditions. There are not so many little, irritating, petty, vexatious things pressing thick upon each other that wear out the patience, derange the secretions, thus surely undermining both mind and body, and stamping their impress indelibly upon the child yet unborn. the manual labor itself, taking into consideration the circumstances under which it is performed, is not so wearing. It no doubt is true that mechanics learn to work without thinking, but the same cannot be said of the head of the domestic circle of the present day. Every hour there is something new to be met, requiring extra thought as well as extra exertion. How many, think you, of our laboring domestic women do not labor in a poorly ventilated room, heated with an air-tight stove almost to suffocation? and then they must work from dewy dawn till late at night, often into the small hours, doing wearing, exhausting labor. Methinks you will find them few. No change made because they may be pregnant or nursing children.

We are asked, "who would encourage a female (woman) to perform a trying and difficult operation at such a time?" and yet how many more trying operations would she be called upon to do in discharging the duties of the dentist, is she forced to do by circumstances without encouragement. She must stand for hours over the wash-tub, not only standing in an unphysiological position, performing hard manual labor, but breathing into her lungs the filthy steam of the suds, and more than probably devoting much mental labor, studying how Charlie and Willie and Harry are to be kept in clothes fit to go to school. Mary must be nursed through the measles, Johnny's broken arm must be taken care Do you tell me these are pictures of the imagination, or at most exceptions? I tell you nay. I have often had my ears opened to listen to tales that a woman will tell only to a woman: tales that made my blood boil with indignation at the terrible wrongs that society heaps upon woman. Could Dr. Barker know, as I know, the condition of the women of to-day, he would be as anxious as I am for its amelioration. But how is it to be bettered? Certainly, not by putting up bars to hedge in her sphere of usefulness-this he acknowledges. He says: "that the sphere of woman's usefulness should be extended, I for one justly urge; that she is now debarred from entering many occupations for which she is fitted I allow, but to me it seems that dentistry is not one of that class for which she is fitted physically, though she may be mentally, &c." So here is a bolt to be slipped, a bar to be put up, if the doctor can accomplish it to keep her out of the profession. We look around—some one else has put a hedge in another place. A third person has raised an objection at some other point, and so we find ourselves barred and hedged in. Now, to each and

every one of those men, I would like to ask: "how long do you propose to define woman's position for her? How long do you propose to treat like a child an unresponsible person, unfit to take her destiny in her own hands?" It is a relic of barbarism that she is to be governed and controlled; that her own nature is insufficient to lead her to the most fitting duties, but that they must be pointed out to her by the "Lords of Creation," as though they knew her needs and capabilities better than she herself. The very fact that they consider it necessary to do this, shows that they know as little of woman's nature as they do where lies the ashes of Julius Cæsar.

Let woman choose any occupation she will; let her be her own judge. She is competent to decide her own destiny. She may make mistakes, so has man. When she takes this position, she will then be in circumstances where she will say for herself whether she will work through childbearing or not in most cases; and I wish to say right here that I have known those of the male persuasion who were at times obliged to send away work because they were not in a condition to do it. I have known dentists who were not unfrequently obliged to leave their office on account of sickness. I have known others who spent two or three months of every summer traveling and recruiting, and yet no one thought of questioning their right to their occupation. Were it not fraught with so much evil to my own sex, I confess I should be amused at the idea men have of women. They have not one iota of confidence in her womanly nature. imagine that she needs bars and bolts, laws and prohibitions made expressly for her, or she would fly off into all sorts of unwomanly things. Never was there a greater mistake. As you may remove all the dykes and barriers built along the seashore to hold the ocean in check, and yet it will not leave its bed. The first rush of the waters when they feel their freedom, may be beyond their legitimate place, yet impelled by the irresistible forces of nature they will surely return to their proper channel. So you may at once cut all the fetters that custom has bound around woman; dash away at one stroke all the barriers built to keep her out of any sphere of action, and woman will be woman still. She will make no protracted efforts to secure and hold a position for which nature has unfitted her. We have individual cases of men chosing occupations for which they are not fitted, so doubtless there would be of woman, but as a sex she would always be true to her own nature, and fill the sphere for which she was designed by an all-wise Creator. And I do most earnestly question the right or propriety of any body of men deciding what her sphere shall or shall not be.

FALLS OF ST. ARTHONY, Minn.

## WHAT ARE DENTAL COLLEGES?

BY EDWIN T. DARBY, D. D. S.

The question under consideration may at first appear to some as superfluous and absurd, yet it is an inquiry frequently made, and one which has interested each of us at times; hence it is conceded to be worthy of an answer.

It is true, ever since the existence of dental schools, catalogues, circulars and announcements have been lavished upon the profession, with a view of instructing all on this point, and yet, to-day, the majority who have never visited a school of the kind, are as ignorant of the manner in which it is conducted "as was the countryman who asked if they had animals at the theatre."

It is true catalogues and circulars have done much towards enlightening the minds of some; they have given a general idea of the nature and construction of dental schools, and have, perhaps, been as explicit as it was possible to be in an article of the kind; but had they conveyed the real idea, the answer to the question before us would be unnecessary.

It is true many of our most valuable and interesting articles, intended to instruct the profession on this point, fall into the hands of the careless and indifferent, and if read at all, it is in a hasty manner, and even then laid aside, never again to be referred to. But the time is rapidly hastening upon us like the flames of the burning prairie, when it will behoove us to awaken from sleep, and fathom the mysteries around us. The time is not far distant when the great line of division will be drawn; "the sheep on the one hand, the goats on the other." Thus it has been in the medical profession; thus will it be in the dental profession a few years hence when these, our fathers, have fallen asleep.

It is not unnatural that the dental student should manifest some curiosity in regard to the school which he contemplates attending. He has, perhaps, a vague idea of what he is to study, of the character of the lectures he is to hear, of the operations he is to see performed, and those he is to perform himself, yet there are many things as dark as midnight; and though he has had some one to partially lift the veil from his eyes, he still gropes in semi-darkness.

On a visit to some of the Western States during the present season, I had the pleasure of calling on many of the dental practitioners, and not unfrequently were questions similar to the following asked:

Do you think it worth a man's time and money to attend a course or two at a dental school? Are the instructions imparted of such a nature as to prove a benefit to me in after life? Does the student receive ideas which cannot be found in the various works on dentistry? Do they have

patients enough to give each student an opportunity of performing the various operations pertaining to the practice of dentistry?

These and many other questions of a similar nature are frequently being asked, and it is because the questioner does not understand. I am not disposed to call dentists an ignorant class of individuals—" far from it;" such an appellation would be unjust. We all stood in the same path before the way was made known to us.

It would be impossible to give a minute description of a dental school in an article of this kind, but a few remarks in this connection may not appear out of place.

First, let us consider the character of the lectures delivered from the various chairs, commencing with anatomy and physiology. From this chair is taught the nature and chemical composition of bone; the name and position of each bone entering into the formation of the human skeleton; the name, attachment, positions and office of each muscle, ligature, nerve, vein and artery; the phenomena of health and disease; the hygienic rules and principles of life, and the changes incident to dissolution. Associated with this chair is the dissecting room, where ample opportunity is afforded the student to perform such dissections upon the human subject as his wishes may dictate, with models and diagrams to assist him. Before the class are performed the various vivisectures on the lower animals. The demonstrations from this chair are such as to render the study of anatomy and physiology not only instructive, but easy and interesting.

Students have been known to enter college entirely ignorant of this study, who could not define a malar from an occipetal bone, or a patella from a dorsal vertebræ, but when the session closed had a good general knowledge from the above chair. But some may say, could not the student gain the same knowledge in the same time from works on this subject? We answer without hesitation, he could not, and for two reasons: first, the mind cannot be enlisted to that degree while reading, and second, studying bones without the bones themselves and the necessary demonstrations, is indeed "dry business."

From the chair of "materia medica, therapeutics and the principles of dental surgery," is taught the nature and application of the medicinal agents. "General pathology, dental pathology, the pathological relations of the teeth to other parts of the system, together with a minute description of all special diseases that have any relation to dental surgery, or interest to the dental practitioner."

The diagrams used to illustrate the teachings from this chair are such as have been taken from abnormal specimens, carefully preserved and deposited in the College Museum. From this chair is freely imparted the

various ingredients, with the manner of compounding our most valuable dentifrices and mouth washes. In short, the knowledge gained by the attendance of one course of lectures delivered from this chair, is infinitely more than years of practice would develope.

The lectures delivered from the chair of "chemistry and metallurgy," with the many valuable and interesting experiments, performed during the session, are of great importance to the dentist. Is it not important that we all have at least a general knowledge of the chemical laws which govern a universe of matter?

From the chair of "dental physiology and operative dentistry," is taught the physiological anatomy of the teeth, both general and microscopical. The diagrams taken from microscopical investigations as well as practical demonstrations before the class, are both interesting and highly instructive. The lectures from this chair embrace the physiological anatomy of the teeth, and adjacent structures of the lower animals as contrasted with those of man; the cause and treatment of dental caries; the various substances used in the process of filling, &c.

In the mechanical department, the student is taught the various operations, from taking the impression to the proper adjustment of denture in the mouth of the patient. The instructions from this chair embrace everything in the mechanical department of any interest to the dentist—the manner of alloying and working the various metals used in the manufacture of plates, solders, clasps and springs. From this chair also the student receives many valuable formulas, which will enable him to prepare many of the compounds used in the laboratory. Aside from the lectures, the student is expected to attend the clinics of the institution, where a superabundance of patients invariably present themselves for the various operations pertaining to dentistry. This room is furnished with a large number of chairs, and the student is assigned his patient and chair, and can at once proceed with any operation necessary to be performed. In this department, advantages are afforded the student which very few would derive in a private office.

Hence the fact is a self-evident one, that in no other way can the student gain the instruction he desires with that advantage which dental schools possess.

The universal testimony of students at the end of a college course, is that they have accomplished more in four months than they otherwise could have done in the same number of years.

Finally, if a dental education is worth anything, it is worth our time, our money, our labors, our talents, our skill; and if literary schools have been instrumental in advancing literature and art, so have dental schools been instrumental in advancing the science of dentistry.

At the day dental schools sprung into existence, with them opened a field which from the beginning had been hedged up by selfishness, prejudice and dishonor. It is only by this interchange of thoughts and ideas that science has been made manifest, or art developed. other minds is as necessary to the play and the development of genius, as the light of other bodies is to the play and radiation of the diamond. A diamond incarcerated in its subcutaneous prison, rough and unpolished, differs not from a common stone, and a Newton or a Shakspeare deprived of kindred minds, and born among savages, a similar nature would they have possessed. As a profession, we have much to encourage us; the avenues are opening, widening and lengthening. We are rapidly gaining the vantage ground, and it only remains for its members to come up to that stand-point of duty which professional men should maintain, and the work will go along, with a power sufficient to uproot all that has impeded it in its progress for past ages, and ere long stand forth one of the honored professions of our land.

## PHENOL SODIQUE-AN ADDENDUM.

BY M. P. LINTON, M. D.

My hasty communication upon Phenol Sodique, published in the last DENTAL TIMES, which necessarily was of a brief and general nature, has called forth quite a number of letters of inquiry: more, in fact, under the pressure of business, than I felt I had time to reply to singly. I therefore concluded, with the idea of Franklin, in having grace said over the meat tub in the fall, to serve for the whole year, I would wait until the pext issue, and then answer them all at once.

Of those inquiries pertaining to dentistry in its own special department, after what has been said, I should suppose there would needs be but slight "extenuation" further, as a little reflection, and a few applications of the article in question, would, I trust, sufficiently "amplify" all the points in reference. The practitioner always bearing in mind the distinctive properties of the phenol—hæmostatic, disinfectant and antiseptic—all of which it possesses in an eminent degree; and wherever any such agent is indicated in the case, he may always safely resort to it, with an almost certainty of relief, if not indeed a speedy and absolutely successful issue.

So much then for this department of the subject; as here, may be, in a work professedly devoted to matters of the dental art in a stricter sense, perchance 'twere well to rest it. And such would be my choice, but that, in the latter portion of the article above referred to, having, possibly out of place, in a measure, somewhat trenched upon the properties and appliances of phenol in a medical point of view, calling forth quite a number of communications upon the subject, some critical and a

few querulous, though the rest of them evidently seeking in good faith for a higher and a better information.

I therefore, out of self-defence from the former, not less than in a respectful deference to the latter, feel constrained to ask the indulgence of yet a few more words upon the premises, and especially so since the omission of a single word, (but whether from my own inadvertency or through the fault of the printer, I cannot now pretend to say,) as it would appear most of the difficulty and misapprehension has arisen. As in speaking of ozena, I should have said, "for the local treatment," presuming that most of my readers, at least the medical portion of them, if they will reflect, are doubtless well aware that that complaint is rarely, if ever, strictly a disease, per se. But, on the contrary, merely the outcropping or local development of some other vices, taint or abnormal condition of the system, hereditary or acquired; as scrofulitic, scorbutic, syphilitic, rheumatic or gouty; some hepatic or renal derangement; the sequel of scarlatina or rubeola; some badly developed or repelled outaneous affection; the too sudden drying up of old ulcers, issues or some other accustomed natural or vicarious drainage of the body, &c. All of which should ever be borne duly in mind by the would-be successful practitioner, and after a close and searching investigation of the case, his constitutional remedies should be applied accordingly. After which, when the system shall have become fairly and fully under their controlling influence, he then, and not till then, may resort to his local treatment, with any degree of hope or rational prospect of success. For it must be only but too obvious to every reflecting mind, that forever vain would be our efforts in essaying to destroy the well-established tree by the mere lopping off of a few of its extraneous branches, while the vigorous root, still undisturbed, remained firmly anchored in the life-sustaining soil. would only but "reborgne anew," and grow the more luxuriant and strong.

And even so of this disease, if happily repelled from its already comparatively unimportant established quarters, there is almost an inevitable certainty that at no distant day it would re-develope itself, and more vigorously from its temporary rest in some yet more enclosed and vitally essential tissue or organ of the body.

But after the course above premised, I still aver, and in all good faith, that so far as my experience has yet gone, I know of no other article in the whole materia medica so prompt and efficient as a local auxiliary in such a case. But here, en passant, I would observe that in this, as indeed in almost every other case of practice, at least of a graver or chronic nature, more than one-half of the battle always rests in a proper preliminary direction of our measures in putting the general system under an efficient controlling remedial influence before having recourse to any of

our local or specific adjuncts in the matter. For this, be it remembered, is the solution to the great problem, why the same article of medicines in the hands of one practitioner is almost always a success, while in those of another it is almost as constantly a failure.

As to the method of applying the article in question, I will briefly state what has been my course of procedure in such cases. After pursuing the preliminary course, as aforesaid indicated, I have had the nostrils well syringed out (by means of a Wood's, or other suitable apparatus,) with tepid Castile soap-suds, taking care to place the head of the patient in such a position, and to throw the jet in such direction as best might insure the attainment of the end in view. After which I inject a weak solution of the phenol—say one part to twelve or fifteen of water to commence with, gradually increasing in strength as the patient is found to bear it. And if any ulcerated points present themselves, to touch them well by means of a camel-hair pencil with either the phenol in full strength, or a saturated solution of argentum nitrats, taking care always that the patient shall not swallow any of the material.

And this should be repeated at least once or twice a day; after which that is each operation as above, the parts first drying should then be keps well anointed with the following prepared liniment: equal parts phenol glycerine and neats-foot, or any other mild, undrying oil, gradually increasing the first article as the case advances; to which may advantageously be added the occasional inhalation of the vapors of phenol, as by that means it may permeate and reach those tissues that could not otherwise be approached by any remedial agent, as you may readily conceive that all parts of the creating apparatus is more or less contaminated by the deleterious exudations. And if this course is persistently pursued, I think the practitioner will have the satisfaction of finding that there are but few cases that will not, sooner or later, yield to his skill and perseverance, and success must crown his efforts.

And so much for ozena, while for its kindred, or perhaps identical disease of the antrum, differing only in its local developments, the same views, the same treatment, and the same results may be premised, pursued, and readily anticipated in the end. Of course, understand me, I do not here allude to any of those tumors, "benign" or "malignant," incidental or pertaining to these parts, (unless perhaps in their very incipient stages;) the former of which belonging exclusively to the province of the surgeon, while the latter, like the genuine cancer, apart from personal consideration, and the common sympathies of humanity, can only be of moment to the undertaker—a mere question of time, as at an earlier or a later day, they as certainly run their fatal course as the shadows of the night must close upon the morning's rising sun.

NEWTOWN, PERSA.

# THE SIXTH ANNUAL SESSION OF THE AMERICAN DENTAL ASSOCIATION.

Dear reader, were you present at the annual session in Boston? If you answer affirmatively, we feel assured that you will state that you were amply repaid, and left that classic city laden with new and valuable suggestions; but if you answer negatively, let us say you have missed a session of great interest, a loss you can never regain. It is not our intention to present to the readers of the TIMES a regular report of the proceedings, as this can be obtained from the monthly journals, in which you will read what was said, some things that were not said, while a great portion of what was of real vital interest is not reported at all. This must ever be the case with published proceedings, let them be ever so well written or carefully reported, for the reason that questions are asked and answered, and speakers make points in their remarks which are unnoticed by readers; but to these proceedings we recommend all, as they give the best obtainable information of what was done and said on that occasion.

We shall briefly direct attention to some of the most important subjects there considered, with such thoughts and suggestions as present themselves.

### FIRST DAY-MORNING SESSION.

The meeting was called to order on Tuesday, the 31st of July, 1866, in the Hall of Representatives, of the State of Massachusetts, (the Committee of Arrangements having obtained the use of the State House from the Legislature,) Dr. C. W. Spalding, of St. Louis, in the chair.

Prayer having been offered by Dr. A. A. Cook, Dr. N. C. Keep, of Boston, delivered the following address of welcome:

Mr. President, and Gentlemen of the American Dental Association:—
The very pleasant duty of presenting the welcome of the Massachusetts
Dental Society, and the dentists of New England, to you has been assigned to me. Lrecognize in each of you, gentlemen, a delegate of some society, bringing with you the fruits of the research and observations of the society which you represent, and commissioned to carry back from this meeting the results which may be eliminated from examinations of specimens, clinics, and discussions by this Association. Gentlemen, the meeting of such numbers of our profession to consult for the advancement of rational and scientific principles, and thereby to promote the usefulness and respectability of our specialty is of recent date. These meetings, if judiciously conducted, must exert sanitary and scientific influences of the highest moment. To accomplish this most desirable object, let each resolve to seek earnestly for the truth.

I welcome you to the Commonwealth of Massachusetts; her jewels are her children. For half a century at least the accumulation of wealth, so often the object of effort and desire by the world at large, has been raised above the mere love of accumulation by an enlarged benevolence. As illustrations of what I mean, I might cite the examples of McLean, Law-

rence, Appleton, and the great prince of givers, Hon. George Peabody, whose benefactions to society are like copious showers, when the humblest plant and the ornamental shrub are stimulated to new life, usefulness and beauty. Names like these, sons of Massachusetts, who have been benefactors of mankind, are sure to be remembered with honor and complacency by us, fellow-laborers in diminishing human suffering. By the remedial powers of our art, we are enabled to do much to relieve distress

and improve the condition of the unfortunate.

In seeing our institutions, to which we welcome you, you will find the great New England idea that they are to promote the education, comfort and happiness of all classes of society in the main carried out. Provision is made for educating all classes of persons, and every profession except dentists. But we hope ere long to have a dental college, museum and library, which are urgently needed. I welcome you to the City of Boston, to Fanueil Hall, to Bunker Hill, to Harvard University, to our State and City Hospitals, to our City Library, to the collections of the Boston Society of Natural History, to the Warren Museum, where the most perfect skeleton of the mastodon is preserved, to the Institute of Technology, to the Cabinets of the Medical College, to our harbor and its islands, and last, but not least, to our hearts and hospitalities.

The report of the Committee on Credentials was then presented, which being read, was accepted. The report stated that there were representatives present from thirty Dental Associations, of four colleges, numbering one hundred and seventeen delegates, with thirty-five permanent members.

The chair, on motion, appointed as the Nominating Committee, Drs. W. W. Allport, J. Forbes, A. Hill, C. R. Butler, W. H. Atkinson, W. H. Morgan, J. S. Knapp, T. L. Buckingham and A. Lawrence, who retired for consultation.

The Report of Treasurer was received, and an Auditing Committee appointed.

A resolution was offered by Dr. George Watt, that a committee be appointed to draw up a Code of Ethics for the government of members, which was adopted, and the following committee appointed: Drs. Watt, McQuillen and Allen.

After a recess of twenty minutes, the Nominating Committee made their report. An election was entered into, which resulted in the selection of the following named gentlemen for officers of the Association for the ensuing year:

President—C. P. FITCH.

1st Vice-President-W. H. MORGAN.

2d Vice-President-L. D. SHEPARD.

Corresponding Secretary—A. HILL.

Recording Secretary-J. TAFT.

Treasurer-W. W. SHEFFIELD.

The Association then adjourned to 71 o'clock, P. M.

### FIRST DAY-EVENING SESSION.

The principle business of the evening session consisted in the delivery of an excellent address by the retiring President, Dr. C. W. Spalding. The views there expressed are so admirably and forcibly presented, that it is commended as worthy of careful perusal. On the subject of Dental Education, he said:

"I doubt the utility of attaching a dental chair or chairs to schools of medicine, for the purpose of graduating students to practice dentistry. In my estimation such chairs are much needed in medical schools, but are useful only as a means of rendering the qualifications of the medical student more complete and comprehensive. Impressed as I am with the conviction that no subject of greater importance to the future well-being of our profession can engage the attention of this body, I take this occasion to bring the subject to your notice, and to propound to you the question whether we do not need a better, as well as a more extensive, system of dental education. To that question I think there can be but one response. The want is too perceptible to require either an argument or even an examination to prove its existence. The next question to be considered is whether the thing is practicable. Can it be done? Have we the means for its accomplishment within ourselves? And if this question is affirmatively answered, the final one is, how can it be best accomplished? We have the amount of educated talent in our ranks, which would be required to discharge the duties involved in the prosecution of the proposed work. All that is necessary is to draw out, to enlist, and to interest that talent, and we shall find that we have it in abundance. All enterprises of this character require, to insure success. two principal things-men and money. The ranks of the profession will supply the first, the second must come from their pockets. A little calculation will show how easily the necessary funds could be obtained, and how light the tax would really be which would yield sufficient means to place the whole enterprise upon a substantial basis. Let us suppose there are within the limits of the United States 10,000 intelligent dentists who can well afford to contribute to this important object. Suppose this whole number should each contribute \$25 a year, for a period of four years. This light tax would yield the enormous amount of one million of dollars. If but one-half this sum were realized, we shall have provided for a most evident present want. Some of the modes which suggest themselves for the accomplishment of this scheme are these: We must first arouse a deeper interest in the dental schools already established. We must relieve them from the pecuniary embarrassment under which some, if not all, are now laboring. We must provide them with the needed appliances for putting their respective institutions into good working condition. They are in want of books for their libraries, furniture for their infirmaries, fixtures and machinery for their laboratories, preparations and specimens for their museums, chemical and philosophical apparatus, The next important consideration is the establishment of an additional number of schools. So far as I know there are but five dental colleges in the whole United States: one in Baltimore, two in Philadelphia, one in New York, and one in Cincinnati. We want to enlist the whole mass of the profession in this subject. To do this it needs only that the

subject shall be fairly uncovered, and laid before them. Our young men have a right to demand that we give them opportunities to educate themselves, for it is among them that the great work is mainly to be done. Once having provided ample educational facilities, we, in return, shall have the right to insist that every candidate, before assuming the high duties of a practitioner of dentistry, shall at least have passed the ordeal of a thorough examination before a properly constructed dental board, if we do not go still further and demand that he shall have graduated at a dental college."

After the passage of a vote of thanks to the retiring officers, and the transaction of some unimportant business, the session closed.

#### SECOND DAY-MORNING SESSION.

The second day's morning session was taken up with the reports of Committee on Dental Physiology. Proposed amendments were offered to the Constitution; there was also an excellent essay presented by Dr. John Allen on Dental Physiology. The report on Dental Physiology coming up for consideration, an animated discussion ensued, opened by Dr. J. H. McQuillen on the subject of interglobular spaces in dentine, and was participated in by Drs. Allport and Suesserott on the same subject.

This session was an exceedingly interesting one; the debate on the subject of interglobular spaces attracting more than usual attention, and being participated in by the speakers with great interest. At the evening session, the same subject was considered, the speakers being Drs. Atkinson, McQuillen, Barker, Allen, Dodge and Taft. Several of these gentlemen spoke at length on this subject, the debate on some occasions being of quite a personal character.* The published reports of these sessions are of more than ordinary interest, and this discussion will be doubtless an incentive to a more extended examination of dental structures by means of the microscope, and hence will be productive of much good.

The Order of Business was suspended to receive the report of the Committee on the Claims of the Dental Vulcanite Company. The recommendation of the committee was to create a commission of five members, who shall raise funds to be devoted to the protection of the interest of such dentists as may be prosecuted by the Company, provided satisfactory terms cannot be obtained. Considerable debate occurred, several gentlemen protesting against the Association having anything to do with the

^{*}Of this debate, Dr. R. S. Makenzie, of the Philadelphia Press, of Sept. 12th, says:—"The transactions at this session, as reported by Dr. W. C. Horne, New York, are graphic and full of interest. Many important points were discussed. If Dr. W. H. Atkinson, New York, reminded the profession, by the affluence of his locks, of Absalom, he must also have brought into their minds Ishmael, whose hand was against every man, and every man's hand against him. The guerilla warfare which this able eccentric waged on all around is well reported here, and must have been highly amusing."

subject, it being considered a matter which was entirely out of the province of the Association to act upon.

The chair, on motion, appointed Drs. McKellops, Horne, Lyon, Morgan and Cushing.

#### THIRD DAY-MORNING SESSION.

The morning session of the third day was occupied with the following business:

On motion of Dr. B. F. Arrington, of N. C., a committee, consisting of Drs. Morgan, Butler, Mills, Knapp and Lawrence, was appointed to test certain preparations of gold for filling teeth.

The subject of Dental Physiology was resumed, and elicited remarks from Drs. Spalding and Taft.

It was determined by the Association to hear the reports of Standing Committees and all volunteer essays before proceeding to their discussion. The effect of this resolution was shown in the subsequent meetings, as the main features of the reports and essays had passed out of the memory of members, and it was therefore impossible to discuss the subjects presented in the different reports and essays. The reports on Dental Pathology, Operative and Mechanical Dentistry were read, as were also volunteer essays by Dr. J. S. Knapp on the Sacrifice of the Human Teeth, and by Dr. W. H. Atkinson on Reproduction of the Alveolar Processes.

The selection of the next place of meeting being the special order of business, an election was entered into, which resulted in the choice of Cincinnati, Ohio. The announcement met with general approbation.

Adjournment then took place to enable members and invited guests to accept the invitation of the Massachusetts Dental Society, and the dentists of New England present, to an excursion by steamer down the harbor. A short stop was made at Fort Warren to allow those who desired an opportunity to stroll through the fort and around the grounds. A band on the steamer discoursed during the trip most excellent music, which, in addition to the bountiful fare provided, added greatly to the enjoyment of all. The committee who perfected the arrangements for the excursion, deserve especial mention, it being in every sense a perfect success. It consisted of Drs. Wetherbee, Leach, Hitchcock, Salmon, Rolfe, Codman, Lawrence, Bachelder, Keep and Shepard. On the return of the party, a humorous poetic welcome was read at Doric Hall, beneath the flags of the Commonwealth, by Dr. J. T. Codman.

### THIRD DAY-EVENING SESSION.

The evening session of the third day was taken up with the reading of the report on Mechanical Dentistry, with a report on Dental Education, and the presentation of volunteer essays on the same subject from Drs. J. S. Latimer and C. P. Fitch. The remainder of the session was devoted to the consideration of a variety of motions on the report of the commissioners to treat with the Dental Vulcanite Company. The following nominations were finally confirmed: Drs. H. J. McKellops, J. M. Riggs. A. Hill, E. G. Leach, W. H. Morgan and C. W. Spalding.

### FOURTH DAY-MORNING SESSION.

The report of Committee on Dentifrices was read by Dr. McManus, and accepted; also the report on Dental Literature by Dr. Hill.

It having been ascertained that Governor Bullock, of Massachusetts, was in the State House, a committee, consisting of Drs. Shepard, Spalding and Lawrence, was appointed to invite His Excellency to visit the Association. The committee waited upon Governor Bullock at an appointed hour, and escorted him to the speaker's chair, the members receiving him standing in their places. After a brief introduction by the President, with cheers by the members, the Governor spoke as follows:

"I trust, Mr. President, that this too kind introduction does not imply any obligation upon my part, either of courtesy or necessity, of making anything like an address to this Association. According to the very courteous invitation of your committee, it has been my great pleasure to present myself to-day to do honor to the attendance of this honored and respectable convention in the hall of the House of Representatives of Massachusetts. The House of Representatives have extended to the members of this convention permission and a cordial invitation to avail themselves of the use of this hall, and it only remains for me, sir, in behalf of the executive department of the government, to welcome you and the members of your body with equal cordiality to the capital of the Commonwealth of Massachusetts. (Applause.) I am impressed, sir, at the first sight, by the presence, by the individuality, by the whole appearance of your representative body. You represent what was formerly a small specialty in the department of medical science, or that which was at one time but a small branch of the great tree, which has become now almost as large as the trunk itself, and overshadows the community by its services: which is as great for its usefulness as for its love for the good of the race, and you are its ornaments.

I am happy to believe also, Mr. President, that I have the honor to stand before gentlemen who, in their present capacity and experience,

have been true friends of their country.

But, sir, it is my only intention to accept the kind and courteous attentions of your committee, and present to you the cordial welcome of Massachusetts to all the members of your body."

The regular order of business being resumed, discussion on the report of Dental Pathology and Surgery was entered into. Drs. Barker, Kennicott, Knapp, Fitch, Suesserott, Colburn, Watt, Buckingham, Atkinson, McQuillen, Butler, Wetherbee, Clark and Lawrence participated. Their remarks referred to the following subjects: tempero-maxillary anohylosis, neuralgia, alveolar abscess, periodontal inflammation, reproduction of

alveolar processes, influence of scrofulous diathesis on the teeth, diseased autrum and effect of root filling. Each of these subjects received careful attention, and were ably discussed—this session being probably the most interesting and instructive of the entire meeting.

#### FOURTH DAY-EVENING SESSION.

The report of the Committee on Dental Ethics was presented by the chairman, Dr. Watt, and was adopted, as follows:

CODE OF DENTAL ETHICS, ADOPTED AT THE SIXTH ANNUAL SESSION OF THE AMERICAN DENTAL ASSOCIATION.

ARTICLE I .- The Duties of the Profession to their Patients.

SEC. 1. The dentist should be ever ready to respond to the wants of his patrons, and should fully recognize the obligations involved in the discharge of his duties toward them. As they are, in most cases, unable to correctly estimate the character of his operations, his own sense of right must guarantee faithfulness in their performance. His manner should be firm, yet kind and sympathizing, so as to gain the respect and confidence of his patients; and even the simplest case committed to his care should receive that attention which is due to operations performed on living sensitive tissue.

SEC. 2. It is not to be expected that the patient will possess a very extended or a very accurate knowledge of professional matters. The dentist should make due allowance for this, patiently explaining many things which may seem quite clear to himself, thus endeavoring to educate the public mind so that it will properly appreciate the beneficent efforts of our profession. He should encourage no false hopes by promising success, when, in the nature of the case, there is uncertainty.

SEC. 3. The dentist should be temperate in all things, keeping both mind and body in the best possible health, that his patients may have the benefit of that clearness of judgment and skill which is their right.

## ARTICLE II.—Maintaining Professional Character.

SEC. 1. A member of the dental profession is bound to maintain its honor, and to labor earnestly to extend its sphere of usefulness. He should avoid everything in language and conduct calculated to dishonor his profession, and should ever manifest a due respect for his brethren. The young should show special respect to their seniors; the aged special encouragement to their juniors.

SEC. 2. The person and office arrangements of the dentist should indicate that he is a gentleman; and he should sustain a high-toned moral

character.

SEC. 3. It is unprofessional to resort to public advertisements, cards, handbills, posters, or signs calling attention to peculiar styles of work, lowness of prices, special modes of operating; or to claim superiority over neighboring practitioners; to publish reports of cases or certificates in the public prints; to go from house to house to solicit or perform operations; to circulate or recommend nostrums; or to perform any other similar acts.

SEC. 4. When consulted by the patient of another practitioner, the

dentist should guard against inquiries or hints disparaging to the family dentist, or calculated to weaken the patient's confidence in him; and if the interests of the patient will not be endangered thereby, the case should be temporarily treated, and referred back to the family dentist.

SEC. 5. When general rules shall have been adopted by members of the profession practicing in the same localities in relation to fees, it is unprofessional and dishonorable to depart from those rules, except when variation of circumstances requires it. And it is ever to be regarded as unprofessional to warrant operations or work, as an inducement to patronage.

## ARTICLE III .- The Relative Duties of Dentists and Physicians.

Dental Surgery is a specialty in medical science. Physicians and dentists should both bear this in mind. The dentist is professionally limited to diseases of the dental organs and the mouth. With these he should be more familiar than the general practitioner is expected to be; and while he recognizes the superiority of the physician in regard to diseases of the general system, the latter is under equal obligations to respect his higher attainments in his specialty. When this principle governs, there can be no conflict or even diversity of professional interests.

## ARTICLE IV .- The Mutual Duties of the Profession and the Public.

Dentists are frequent witnesses, and, at the same time, the best judges of the impositions perpetrated by quacks: and it is their duty to enlighten and warn the public in regard to them. For this, and the many other benefits conferred by the competent and honorable dentist, the profession is entitled to the confidence and respect of the public, who should always discriminate in favor of the true man of science and integrity, against the empiric and impostor. The public has no right to tax the time and talents of the profession in examinations, prescriptions, or in any way without proper remuneration.

The adoption of this report elicited much opposition from many members, the debate being particularly spirited. The opposition to the Code may be explained by the remarks of Dr. McQuillen, who, though a member of the committee, "stated that he could claim no credit for its preparation; on general principles was opposed to its adoption as unnecessary for gentlemen, and its enforcement impracticable upon those who were not."—Dr. Horne's Report.

#### FIFTH DAY-MORNING SESSION.

A most interesting and instructive discussion was entered into on the subject of the treatment and appliances for the correction of irregularities. Drs. Kingsley, Barker, Taft, Allport, Spalding, McKellops and others, detailed their methods of treatment, which elicited marked attention and interest. The subject of mechanical appliances for cleft palates was taken up, the subject being opened by Dr. McKellops, who presented his own method of manipulations as also the result of the successes he had witnessed in the hands of certain English and French practitioners; he was

followed by Dr. N. M. Kingsley who demonstrated for over two hours his own peculiar methods of obtaining impressions and forming artificial palates, explaining in the minutest possible manner everything connected therewith. The afternoon session was taken up with the same subject. Dr. Kingsley upon the floor, being subjected to the closest questioning, giving in each case a lucid and clear exposition of all he knew on the subject. He was followed by Dr. E. A. Bogue, and we earnestly desire never to be permitted to hear so personal a debate engaged in by any member of the Association; the whole object and aim of this speaker seemed to be to convey the impression that Dr. Kingsley had not given such information at home or abroad as enabled dentists to make artificial palates in the same manner as Dr. K. This position was effectually overthrown by the testimony of gentlemen present, who had made them from the instructions received from Dr. Kingsley at Saratoga and elsewhere, while we were assured by an eminent practitioner and former editor of a Dental Journal, that one gentleman in the West had made a Kingsley's palate from his report of Kingsley's remarks at the Saratoga Convention, without further instructions. At the close of his remarks, a vote of thanks was offered to Dr. N. M. Kingsley, on motion of Dr. W. H. Atkinson, for his past and present efforts to impart instruction and information on the subject of substitutes for palatine fissures. It was unanimously adopted.

## SIXTH DAY-MORNING SESSION.

The Committee on Publication were instructed to sell, at their discretion, copies of the printed reports of the proceedings of the Association, to whomsoever, and at whatever price, they might think best. This is an important step in the right direction, as it has been impossible for members of the dental profession to obtain the entire proceedings without they were members of the Association. We hope the transactions will be put in all the dental depots for sale, that all who desire may read the valuable essays, reports and discussions, with profit and instruction.

The personal reflections upon Dr. Kingsley, introduced into last year's report on mechanical dentistry, on the subject of artificial palates, were, by unanimous vote, ordered to be expunged from the report to be published by the committee.

The following report introduced by Dr. W. C. Horne, of New York, was unanimously adopted:

At a meeting of the members of the American Dental Association, held at the Revere House, on Monday morning, Aug. 6th, Dr. Morgan in the chair, Dr. Kingsley as Secretary, a committee was appointed to draw up resolutions of thanks, for the adoption of this meeting, the committee consisting of Drs. Forbes, Taft, Clarke and Horne. The resolutions presented by Dr. Horne were unanimously adopted.

Whereas, The members of the American Dental Association having received marked kindness and attention during their session in the City of Boston, are desirous of expressing their appreciation of those courtesies: therefore

Resolved, That our thanks are due and are hereby tendered to the authorities of the State for granting the use of the Legislative Halls for

the purposes of this Association.

Resolved, That to our Committee of Arrangements, and the dental profession of New England, we owe a debt of gratitude for their unceasing efforts to contribute to our comfort and pleasure, which we will ever hold in remembrance.

Resolved, That to the daily press we offer our thanks for faithfully

reporting and publishing our proceedings.

The subject of dental education was then taken up. The subject was opened by Dr. Kingsley, and was participated in by Drs. Miller, Colburn, Barker, Kennicott, Allport, Watt and McQuillen. The tendency of the remarks of each of these speakers was to encourage and strengthen dental colleges; there were no invidious and caviling remarks made calculated to bring discredit on any institution, but the whole discussion was doubtless cheering and encouraging to those engaged in teaching and elevating dental colleges.

On motion of Dr. McKellops, it was resolved that the urgent request of the Association be extended to all the members of the profession who may have in their possession any anatomical, physiqlogical or pathological dental preparations or specimens to place them in the museums of the Dental Colleges, that they may then be of the greatest value to the profession.

A committee having been previously appointed to wait upon Major-General Benjamin Butler, he being then present in the State House, and request him to address the Association, reported that Major-General Butler would comply with the invitation. He then entered the hall, the audience rising and applauding as he entered.

The President, on behalf of the Association, welcomed him to the Association, and, after an introduction, he addressed the body substantially as follows:

#### SPEECH OF GENERAL BUTLER.

In commencing, he thanked the President and members of the Association for the grateful compliment offered him, and said that the sudden call left him without fitting thoughts or expressions in which to render his thanks. They represented, he said, a large portion of the Union as delegates from a profession which has made more advance within the last half century than any other, perhaps because a greater need for such advance had been shown within that time. If they looked to any branch of science, of mechanics, of literature, they would see that the wants of the age had always been met by a supply. A hundred years ago the Atlantic cable would have been an impossibility, because there was no need for it. It

required first the canal, then the turnpike, then the railway, then the steamboat communication, moving gradually step by step, and laying the foundation for the need of the introduction of telegraphic communication.

He would remember that to their profession was due the invention, if not that certainly the development of one of the two great discoveries of the age, that of ansesthesia. He had been the delighted spectator of its use on a great and extended scale. And to the use of chloroform and ether he thought could be attributed the most remarkable fact in surgical science, that out of the 90,000 men who passed through the hospitals of the Department of Washington, but six per cent: of them lost their lives. An unprecedented extent of cure resulting from surgical operations with which no nation of the world can make any comparison.

They must also remember that while these good gifts have been given to them in their profession, so the good gifts of the Almighty have been spread over the land in every profession, and he would be a bold man who would declare that there was not progress and development. He remembered that one of the most scientific men of England was demonstrating over the whole country the impossibility of a steamboat being constructed which could cross the Atlantic Ocean at the same time that the Savannah

sailed from the harbor of New York.

But while they all agreed they could make progress in science and the mechanic arts and in every department of human elevation, yet there are those who believed that there can be no progress in the science of human government. He asked if they could not hope that there would be an advancement in political science, in the knowledge of the science in which this nation shall be as she has been in the steamboat, in the telegraph, in the locomotive, in the great relief of human suffering—might they not believe that the nation would be the banner nation in bringing government as near perfection as human affairs will permit, until at least such government would be established not only in this country, but all over the world, as to allow every man to reap the fruits of his birthright and be the equal of every other man if he can.

Renewing his thanks for the very agreeable and courteous honor done him, he wished the members of the Association God speed upon their return to

their pleasant homes.

The remarks of Gen. Butler were frequently interrupted with applauses, which lasted for some time after their conclusion, when an opportunity was afforded, of which many of the members availed themselves, to shake hands with the General.

Dr. S. P. Miller, of Worcester, introduced the following resolution, which was enthusiastically adopted:

"Resolved, That this Association is happy to see and hear Major-General Butler, and it also wishes he had been in command at New Orleans one week ago."

After the passage of the above resolution, the General retired, and the discussion of dental education was resumed. It was participated in by Drs. Hill, McKellops, Barker, Fitch, Atkinson, Taft and Riggs. The last named gentleman was particularly severe on dental colleges, and to judge from the tenor of his remarks, his idea was that these institutions had better

be abolished as quite useless; he spoke sarcastically of "fat, lazy professors," From certain remarks by other gentlemen named, we should judge that there existed somewhere about the caput active congestion, if not acute inflammation. We shrewdly suspected that non-election as professors had some influence on their feelings and judgments. One particularly spoke of his "mission" to teach, and washed his hands, publicly, of what he termed "dirt," as he had done repeatedly during the session; doubtless to himself they personified purity itself.

#### SIXTH DAY-AFTERNOON SESSION.

On the reading of the minutes for the morning session, Dr. McKellops objected to the vote of thanks to General Butler appearing on the record, and Dr. Spalding moved that the Publication Committee be directed to expunge all political matters from the transactions previous to publication; both motions were lost, also a motion to reconsider. A protest against the action of the Association in suffering political remarks to appear on the records was presented, and entered upon the minutes—it was signed by about a dozen delegates. A large portion of the afternoon session was taken up in debate on this subject.

A resolution was offered by Dr. Lawrence as follows:

Resolved, That a committee of three be appointed to draft suitable suggestions upon the subject of accepting students, and that such suggestions be printed in circular form for the consideration of every dental practitioner in the United States. That the expense of such printing and distribution be borne by the Association.

The committee consists of Drs. Lawrence, Watt and Taft.

The subject of dentifrices was discussed, and liquid preparations came in for considerable denunciation, but no definite action was taken. The merits of crystal gold was discussed by Drs. J. S. Knapp, Wetherbee and others; also the merits of cylinders for filling teeth. Dr. C. Palmer presented Dr. Allport's theory of pulp amputation, and asserted that union of the cut surfaces took place by first intention, to which Dr. McQuillen made very decided objection. In response to an invitation from Dr. N. C. Keep, those members remaining spent the evening at his house, where there was a most cordial interchange of fraternal sentiment and civilities.

#### SEVENTH DAY.

The final session was but slimly attended, most of the members having left for their homes. The session was only prolonged to hear the report of the committee appointed to make terms with the Dental Vulcanite Company. Dr. Morgan, the President of the commission, reported that they had agreed upon terms with the Rubber Company which required the dentist to take a license for the use of hard rubber, on the basis of a royalty

of two and a half dollars for full upper or under sets, and one dollar for partial sets of six teeth or less. The reckoning to commence from May 1st, 1865, from which time to July, 1866, a deduction of fifty per cent. would be made. The books of dentists to be examined in cases of suspected fraud, by the local society or an impartial committee. He expressed the opinion that the Goodyear patent was a good one, while the Cummings' claim was without foundation. The terms agreed upon he believed to be as good as could be obtained. The license, accompanied by a circular, would be sent out to all dentists. The Commission had not in any way committed themselves to the legality of the Cummings' patent.

The Association confirmed the action of the Commission, and then adjourned to meet at Cincinnati, the last Tuesday in July, 1867.

We regret that space will not permit us to notice many valuable inventions, appliances, chairs, in fact almost everything in the way of office or laboratory instrument or furniture there presented. Many of these should receive special description. The daily clinical demonstrations were of priceless value to those who wished to see and know how to do good work in the operative department. These, with many other things, were in every way commendable; but there were also some things which, as an impartial journalist, we must call attention to as calculated to mar, instead of perfect, our Association meetings. One of these is the nonenforcement of rules of order by the presiding officer, who has it in his power either to have harmony or discord among members, and no person should accept a position, as presiding officer, unless he feels himself competent to decide such questions of order as may present themselves in a deliberative body. There were several sessions of the meeting where almost the whole time was occupied in debate on motions and resolutions which a President could have decided in a few moments, thus permitting business to proceed as it should have done. There was one other feature to which we shall direct attention-it was the frequent clapping of hands by members, and applause which were indulged in by some, which, while appropriate enough in a political body, was decidedly out of place in a scientific one. The introduction of politicians and political subjects into the Association is one calculated to weaken, instead of strengthen the organization, by introducing subjects of discussion foreign to the objects and designs of the Association. As an individual, we agree with the sentiments expressed by the gentlemen introduced, but, as a member of the body we think no one should be introduced unless their address shall be upon scientific subjects. There was so much to be gratified with at the Boston meeting that we feel almost constrained not to mention what, in our report, seemed to us imperfections, but believing that a proper discussion of subjects,

where there is a difference of opinion, leads to good results, we have published these thoughts.

We finish this report with a single suggestion. The business of the Association is yearly accumulating, the session is being extended, and members are obliged to be absent a longer time than they desire. How can this be obviated? We suggest that time can be gained in one direction by dispensing with the reading of the reports of Standing Committees, but have them printed and placed on members' seats. They can then be read between sessions, and delegates will be able to discuss the reports when they come up in proper order.

G. T. B.

#### OBITUARY.

The American Dental Convention, at its annual meeting in New York, adopted the following resolutions of respect to the memory of Ashael Jones, a gentleman who for many years devoted his energies and talents to the advancement of the best interests of the dental profession. As a gentleman and friend, we cordially bear testimony to his worth. G. T. B.

Whereas, The American Dental Convention has learned with profound sorrow of the death of Mr. Ashael Jones; and

Whereas, Mr. Jones has so long been thoroughly indentified with the dental profession, individually and collectively, as perhaps no other man ever was; therefore,

Resolved, That this Convention desires, as much as mere words can, to express its sense of the irreparable loss the dental profession has sustained in the sudden removal of its late co-laborer and untiring friend, Mr. Ashael Jones.

Resolved, That the Secretary transmit a copy of these resolutions to the family of our late lamented and universally beloved associate, and to the dental journals for publication.

### Editorial.

WE are under obligations to Messrs. Parrish and Mellor, pharmaceutists, Phila., for an agent of considerable value to the dentist. It is known as Tinct. Iodinii Decolorat, or colorless tincture of iodine. It is designed only for local use, and possesses the properties of the officinal tineture, without leaving the usual unpleasant stain upon the surface. It is also useful for removing the stains of nitrate of silver.

G. T. B.

WE are indebted to Dr. Lawrence, of Lowell, Mass., for an interesting specimen of necrosis of the maxilla and alveolar process. It has been placed in the College Museum.

G. T. B.

#### SNOW & LEWIS' AUTOMATIC PLUGGER.

Our experience in the use of the Snow & Lewis Automatic Plugger has been such that we take great pleasure in recommending it to the profession. Having had one in use over six months, we have learned to consider it almost indispensable in practice, and with the improvements lately added, it would seem to combine more advantages than any other in market. It has a large range of force; is easy and certain in its action, giving a blow very much resembling that of the hand mallet, and all the internal mechanism is strong and well finished. It would seem scarcely possible for one of them to get out of repair.



The above cut represents the instrument, one half size.

Messrs. Snow & Lewis have recently added an improvement, by which the working part may be locked, thereby rendering it possible to use the instrument as a hand or automatic plugger at pleasure. This we esteem a great improvement, and a feature not presented in any other automatic plugger. The changes are made in the same manner as that from a heavy to a light blow, which can be done with one hand, while operating, with great ease, and in the shortest possible time. No new parts are added, and the improvement does not complicate the instrument in the least.

We have heard a description of the method of manufacture of this plugger, and were much pleased with the means taken to insure accurate workmanship. The different parts are made by the quantity, under the personal supervision of the inventors, and are worked to gauges in a similar method to that of manufacturing fire-arms, and are interchangeable.

As an evidence of the popularity of this instrument, we understand the sales are more than double that of any other plugger.

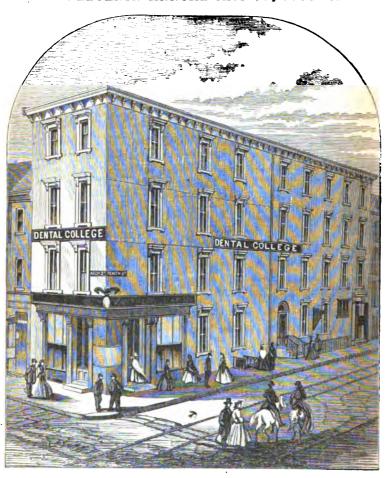
T. L. B.

Dr. G. F. J. Colburn, of Newark, N. J., has presented us with a small caustic holder intended to prevent fluid caustic, such as creasote or solution of nitrate of silver, from running down and cauterizing the lips when being applied to the gums. It is very simple in its construction and can be made by any dentist. A piece of wire two inches long is inserted in a handle, and over the wire is a glass tube one inch long. The tube slides over part of the handle to keep it firm, and a small cork, half way up the tube, keeps the wire in the centre of it. When the caustic is taken up on a small piece of cotton, if any should run down, it is caught in the tube and prevented from touching the lips.

T. L. B.

# PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE ELVENTH ANNUAL SESSION, 1866-'67.



## TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., ELLESLIE WALLACE, M. D., THOMAS WOOD, BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S., CHARLES HAMILTON, SEC'Y.

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E. WILDMAN, M. D., D. D. S., PROFESSOR OF MECHANICAL DENTISTRY.

G. T. BARKER, D. D. S.,

PROFESSOR OF PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS

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JAMES TRUMAN, D. D. S.,
PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIVE DENTISTRY

J. M. BARSTOW, D. D. S.,

DEMONSTRATOR OF MECHANICAL DENTISTRY.

# The Lectures to the Regular Course commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the lst of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course,	Demonst	rators'	Ticket inc	luded,)	-	\$100
Matriculation, (paid bu	t once,)	•	-	-	-	5
Diploma Fee, -	-	•	• .	-	-	30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia.

P. S.—Board may be had at from \$3.50 to \$6.00 per week.

#### PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eleventh Annual Session, 1866-'67.

The eleventh annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and use. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department every process known in the prefession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

### COURSE OF LECTURES.

#### CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the consideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can be performed before the class.

#### DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration.

At the Clinic the incumbent of this chair will also demonstrate before
the class the various operations described in his course of lectures.

#### MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation, compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

#### PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

#### ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissecting room in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

#### QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College. Also satisfactory evidence of having been in practice five years, inclusive of the term of pupilage, will be considered equivalent to the first course of The candidate for graduation must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the Collegecollection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

Candidates for graduation who have not attended lectures.—Dentists who have been in continued practice since 1852 are eligible to be candidates for graduation without attendance on lectures. The candidate for graduation must present satisfactory evidence of his having been in practice for the allotted time, also of his good standing in the profession, he must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must undergo a satisfactory examination by the Faculty, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. Of this class of graduates, the matriculation and diploma fees only are required.

#### TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

# WATRICULANTS.

# NINTH ANNUAL SSSION, 1865-'6 6.

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J. P. Adams,	New York.	H. W. More,	Pennsylvania
Stephen Anmas,	Cuba	J W Nelson	I ещиемосе.
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Samuel C. Britton,	Maryland.	Peter Schembs	Pennsylvania
Charles Buffett,	Ohio	W. Smedley,	•••
P. M. Christie,	. Pennsylvania	H. J. Smith	
R L. Cochran	Town	H. J. Smith, O. W. Strang,	New York.
Wm. H. Crary,		James Tait	Pennsylvania
Frank Darby,		James Tait, Henry F. Tefft,	Maine.
8. C. Dayan,		James S. Thomas	New lots.
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Francisco Dominguez,		A. P. Tompkins,	Pennsylvania
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Hamilton Forrest,		J J Vanderford	Maryland.
Simon Frau, D. D. S		Agustin de Varone	Cuba
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Albert Hape,		Erastus Walker,	New lork.
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J A. Houser,	Pennsylvania.	W. H. Walker,	Wisconsin
Milton Keim,	Michigan	Wardley	S CERUMA.
A. Lawrance		J. B. Wheeler, O. N. Whitney,	New York.
W. K. Lineaweaver,		O. N. Whitney,	Illinois.
Thomas F. McClure,		Wm Williamson	Pennsvivania
Daniel Martin		E. Wilson	New York.
Mariam Martorell,		J. H. Winslow,	
Francisco Mignotte,		•	
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# GRADUATES, 1865-'66.

John P. Adams,	N V	Selivary Deposits
George K. Bagby	. New lurk,	Nitrons Oxida
George A. Dagby	Virgi ma,	Causes of Caries
Henry Berhard,	New IOFK,	Inflammation
Thomas H. Bradfield,	. New Jersey,	Dantistry a Science
Francis A Brewer,	. Missouri,	Duedianceing causes of Caries
Samuel C. Britton,	. maryland,	Treatsposing causes of Carros
Charles Buffett,	unio,	Transmetics
Perley M. Christle,	Ponnsylvania,	Dubbon worses Wotel
William H. Crary,	· New York,	Tedine
Edward S Davenport,	· ''	
Franciscus Dominguez,	· Cuba,	Innammation.
Eugene C. Flamand,	· _ '' ,	The Art of Filling Teetn.
Hamilton Forrrest,	<ul> <li>Maryland,</li> </ul>	Decay of the leeth and Ireatment
Albert Hape,	. Georgia,	Dentistry a Science.
John A. Houser	Pennsvivania	Treatment of Liposed Pulp.
Milton Keim,	. Michigan,	Artificial Dentures.
Washington K. Lineaweaver	. Pennsylvania,	Inuammauon.
Prancisco Mignotte	Cuba	Extracting Teetn.
James W. Nelson	. Tennessee	Indigestion as a cause of Carles
Henry S. Noble,	. New York,	Antrum Highmorianum.
Francis A. Ramsay,	. Pennsylvania,	Sensitive Dentine.
Henry C. Register	. Marvland	Digestion.
Louis Jose Salicrup	. Porto Rico	Extraction of Teeth.
William Smedley	· Pennsylvania	The Fifth Pair of Nerves.
Henry J. Smith,		Sensitive Dentine.
James S. Thomas	. New York	Chemistry.
William H Trueman	. Pennevivania	Materials for Filling Teeth.
Agustin de Varone,	· Cuba.	Development of the Teeth.
Julien J Vanderford,	Marviand	Dentistry.
John H. Vedder,	New York	Treatment of Irregularities.
Ransom Walker,		Diagnosis.
William C. Wardlaw,	S Carolina	Anæsthesis in Dentistry.
John B. Wheeler,	New York	The Dental Pulp.
J M Barrett	Pennsylvania.) -	
J. M. Barrett, W. G. A. Bonwill,	Dolaware { In pra	cuce since 1852.
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Number of Patients visiting the Uli	pic, during session of 18	65–'66,248
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# DENTAL TIMES.

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PHILADELPHIA, JANUARY, 1867.

No. 3.

#### ACONITE AS A DENTAL THERAPEUTIC.

BY GEO. T. BARKER, D. D. S.

Among the many agents indicated in the treatment of dental diseases, aconite should deservedly rank among the most necessary and useful, and yet its inherent qualities do not seem to be understood or appreciated; hence I have concluded that an article directing attention to its properties and uses, will be appropriate and instructive.

Aconite is a plant of the Nat. Ord. Ranunculaceæ, there being four principal species; the Aconitum Napellus is the only one, however, which is officinal in the Pharmacopæias of the United States and Great Britain. The plant is found in the mountainous regions of Germany, France and Switzerland, and has also been introduced under the common name of wolfsbane or monk's-hood, as an ornamental shrub in the gardens of this country, as its helmet-shaped, dark blue or violet-colored flowers are of great beauty. All parts of the plant possess medicinal properties; but in the leaves and roots the peculiar organic alkaloid aconitia, the active principle, is found in the greatest quantity. This alkaloid is by some authors called aconitina and aconitin. The medicine was known to the ancients, and was largely used for the purpose of destroying wild beasts, lest they should overrun the country, aconite being rubbed on pieces of meat, which were placed in their usual haunts.

"Media is presented by Ovid as preparing her poisons from it; it was also used, like conium, as a State poison. The Gauls dipped their arrows in its juice, and at the present day some eastern tribes are said to use it for the same purpose, as well as for poisoning the wells and water tanks of their enemies in time of war." Acouste may be appropriately classed among the nervous sedatives, as it possesses the property of reducing nervous power, while it also depresses the circulation. Sir Benjamin Brodie, Pereira and Dr. Jackson have made a number of experimenta upon inferior animals, (and it appears to be poisonous to all animals and

insects,) and they uniformly found, when aconite was administered, that consciousness and sight were retained long after sensation was lost. Thus Pereira* states that a dog, under the influence of not too strong a dose, will follow his master from place to place, and recognize him by wagging his tail when called, and yet be totally insensible to pricking with needles, pinching, &c. The action of aconite on man is locally, irritant; systemically, powerfully sedative to the nervous system and the circulation, and, in over-doses, a poison. Its influence, therapeutically and physiologically, has been carefully studied by Dr. Alexander Fleming, of Cork, and Professor Schroff, of Vienna. The experiments of the first named were of so exhaustive a character, as to leave but little to be investigated, and were so highly prized, that though an inaugural essay, the University of Edinburgh conferred upon him a gold medal. Dr. Stillé makes the following quotation from Dr. Fleming's treatise:

"FIRST DEGREE OF OPERATION.—In the course of twenty minutes or half an hour after the exhibition of five minims of the tincture of aconite, a feeling of warmth in the stomach is usually experienced, which is occasionally accompanied by slight nausea and oppression of the breathing. After the lapse of thirty or forty minutes, this sense of warmth is diffused throughout the body, and in a few minutes more is attended by numbness, tingling, and a sense of distension of the lips and tongue. There is also tingling at the tips of the fingers, and a peculiar sensation is felt at the roots of the teeth; the feeling of warmth soon disappears, but the numbness and tingling of the lips and fingers continue for a period varying from one to three hours. Slight muscular weakness is generally experienced, with indisposition for exertion, either mental or corporeal. In about half an hour more, the pulse is found to be diminished in strength, and in another hour both the pulse and respiration have become less frequent. Thus, a pulse, which in the normal state beats 72 in the minute, will by that time have fallen to about 64, and the respirations, supposing them to have been 18, to 15 or 16.

"Second Degree of Operation.—Should a dose of ten minims be given at first, or the dose of five minims be succeeded in two hours by another of equal amount, these symptoms supervene more rapidly and with greater severity. The tingling extends along the arms, and the sensibility of surface is more or less impaired. In an hour and a half the pulse will probably have fallen to about 56 beats in the minute, and become smaller and weaker than before, still maintaining, however, perfect regularity. The respirations will have diminished to about 13, presenting, at the same time, a slow, laboring character. Great muscular debility is now experienced; and giddiness, with confusion of sight, comes

[#] Pereira's Mat. Med., vol. ii., page 1087.

on when the erect posture is assumed. The individual sinks into a lethergic condition, evinces great indisposition to be disturbed, although he
rarely falls asleep, and complains much of chilliness, particularly in the
extremities, which are cold to the touch. These phenomena continue in
their full intensity from three to five hours, when they gradually disappear, a sensation of languor, which lasts for several hours more, alone
remaining. This is the utmost extent to which I would recommend the
physiological effects of aconite to be carried, in order to obtain with safety
and success its therapeutic action

"THIRD DEGREE OF OPERATION .- On the administration of five minims more, two hours subsequent to the last dose, the sense of warmth and the numbness and tingling again spread rapidly over the body; the sensibility of the surface is still further diminished; lancinating pains in the joints are occasionally complained of; the headache, vertigo and dimness of vision are aggravated; the countenance grows pale and anxious; the unuscular feebleness increases; the voice becomes weak, and the individual is frequently impressed with a dread of approaching dissolution. Occasionally the pulse is reduced still further in strength and frequency, perhaps falling to 40, or even 36 beats per minute, but still maintaining its regularity. More frequently, however, it rises to 70 or 80, and becomes small, weak, and probably more or less irregular. The respiratory movements are also irregular, being either short and hurried, or deep and sighing. The surface is moist, and still further reduced in temperature. Sickness may now come on, and, if formerly present, is much aggravated, and probably attended by vomiting. These symptoms do not entirely subside for one or two days.

"FOURTH DEGREE OF OPERATION .- On the administration of a fourth dose of five minims, two hours after the third, the symptoms assume a more alarming character; the countenance becomes pale and sunken, froth issues from the mouth, and the prostration increases. Some thus affected have stated that they felt as if dying from excessive loss of blood, Consciousness usually remains, or there may be slight wandering delirium, as occurs also after profuse hemorrhage. The voice is whispering, or altogether lost; the pulse becomes still smaller, weaker and more irregular, and the breathing more imperfect; the surface is colder than before, and is covered with a clammy sweat. I have seen patients recover from this state under the administration of proper remedies. When the action of the drug is carried to a fatal extent, the individual becomes entirely blind, deaf and speechless. He either retains his consciousness to the last, or is affected with slight wandering delirium. The pupils are dilated; general muscular tremors, or even slight convulsions supervene: the pulse becomes imperceptible, both at the wrist and heart; the temperature of the surface sinks still lower than before, and at length, after a few hurried gasps, death by syncope takes place."

The practical inferences which Dr. Fleming deduces from a consideration of the action of aconite on the circulation, are as follows:

- "1. That it is a powerful antiphlogistic.
- "2. That it is calculated to be of great value in all cases where there is an inordinate activity of the circulation.
- "3. That it is contra-indicated where there is obvious mechanical impediment to the blood, particularly through the heart or lungs.
- "4. That it is contra-indicated wherever there is irritability of the circulation, with great diminution of power, such as occurs after seven venous hemorrhage."

The same peculiarity is presented by aconite as with other narcotics, the dose necessary to destroy life differing in individuals, and even influenced by age and sex. Five grains of the fresh extract, one drachm of the root and eighty drops of the strong tincture of the root, are said severally to have caused death, though cases have been recorded where much larger quantities have been taken without inducing fatal results. In a recent conversation with Professor Parrish of this city, he assured me that he knew of one case where two ounces of Fleming's tincture, (tinctura aconiti radicis,) one of the most concentrated tinctures of the root, were taken by mistake, without a fatal result. The best known antidotes were promptly administered, and life was saved, though several days elapsed before the action of the poison subsided.

The therapeutic applications of aconite are various, and are worthy of careful consideration. Baron Storck, of Vienna, was the first to introduce it to notice in the year 1762. By him it was recommended for the treatment of inflammatory rheumatism, and subsequent investigators have also added their testimony to its usefulness. It has also, in consequence of its sedative virtues, been suggested for the treatment of inflammations of the brain, angina, pneumonia, bronchitis, idiopathic fevers, inflammatory conditions of scrofula and phthisis, paralysis, amaurosis, neuralgic rheumatism, gout, passive dropsies, amenorrhaa, &c.

As the design of this paper is to refer to aconite as a dental remedy, I shall pass to the consideration of those diseases where aconite may be advantageously employed.

NEURALGIA.—In the treatment of this distressing affection, aconite will be found to be of great usefulness. Though neuralgia in a part is frequently but the expression of pain dependent on some distant irritation, yet still, numerous cases are recorded where its local application has permanently banished the neuralgic pains. Curtis* details several cases

where immediate and permanent relief was obtained from neuralgia of the fifth pair; Tessier,* several of the same sort cured by aconite internally. Dr. Burgess states that aconite has been very efficient in his hands for the treatment of nervous headache.

Besides being an efficient remedy for the treatment of neuralgia, aconite commends itself for the treatment of certain morbid conditions which are almost daily met with in dental practice. Of this class, I would first mention periostitis, or inflammation of the peridontium. In this inflammation, as an auxiliary to leeching or lancing, it will be found to be of great value, as it will greatly aid in terminating the inflammation by "resolution." It may be directly applied to the gum over the wound opposite the affected tooth, but great care should be observed that but a very small quantity of aconite is thus applied. If the tincture of the root is used, I place on a pledget of cotton not more than two or three drops; as absorption will take place very readily from an open wound, and if a larger quantity be used, the characteristic symptoms of poisoning may be induced. Indeed, such a case occurred recently with one of my patients, who, having obtained a half-ounce vial of the tincture of aconite root, was told (for periostitis) to put three, or at most five drops on a piece of cotton, to be laid between the affected tooth and cheek. Instead of so doing, she poured out on the cotton what she thought was " about" the quantity; as a consequence, all the symptoms described by Dr. Fleming under the head of "Second Degree of Operation," were induced. The symptoms of poisoning lasted nearly a week, though they were greatly relieved by active out-door exercise, wines, and the use of valerianate of ammonia in doses of a teaspoonful three times daily. This case is detailed, for the purpose of calling attention to the necessity of using this agent with caution, and also not to place it in the hands of careless, indifferent or unintelligent persons. As aconite possesses anodyne, antispasmodic and antiphlogistic properties, it is exceedingly valuable for the treatment of inflammation of the peridontium, in cases where lancing or leeching will not be submitted to, the mode of application being to place three or four drops upon a piece of cotton, and place it between the affected tooth and cheek or lip, allowing it to remain. Its sedative influence will be directly exerted upon the nerves in the vicinity, while inflammation will be diminished by its combined action on the circulation. Occasionally violent pain is felt in an alveolus after a tooth has been extracted. If a drop or two of the tincture of the root upon a piece of cotton be introduced into the socket, it will immediately give relief. For pain arising from exostosis or hypertrophy of the cementum, aconite may be used with advantage. For inflammation of the dental pulp, previous to the appli-

[#] Ball, de Thersp., xxxiii., 105.

eation of the arsenical paste, I find it to be often of service, as it reduces the existing inflammation, and when the paste is applied, absorption will take place, and destruction of the pulp ensue, which would not occur, were the paste to be first introduced. For this purpose, however, I think it inferior to creasote.

The antidotes to aconite are, the diffusible stimuli, including the ethers and alcoholic liquors, and active exercise. Of the first named class, Hoffman's anodyne, (spiritus atheris compositus, U. S.,) in doses of one or two fluid drachms, given in water sweetened with sugar, three times daily, will be found efficient, or the preparation of valerianate of ammonia, as previously referred to, may be administered. Where large doses have been taken, the first indication is to evacuate the stomach. For this purpose, a stimulant emetic, such as mustard or warm oil, with a small portion of ipecacuanha, may be employed.

As the tineture of the root is much stronger than the tineture of the leaves, great care should be used in prescribing them. The following are the doses of the prominent officinal preparations:

Extractum Aconiti, L. or E., & grain to 2 grains.

Do. do. Alcoholicum, U.S., 1 grain or 1 grain.

Tinetura Aconiti Foliorum, U.S., 20 or 30 drops.

Do. do. Radicis, U.S., 4 to 7 minims.

Do. do. do. (Dr. Fleming's,) 3 minims.

In prescribing aconite, the smallest quantity should be commenced with, repeating the dose not oftener than every four hours; the medicine to be intermitted as soon as the characteristic signs of poisoning occur.

#### COMPENSATION.

#### BY A. LAWRENCE, D. D. S.

All the forces and events of the universe are unmistakeably regulated by the law of distributive justice. Since the advent of the morphological conception of the universe, the doctrine of "evolution" has taken the place of the notion of a mechanical "creation," and the late discoveries in the world of science has shown that forces are correlative and equivalent, e. g., given—so much heat, an equivalent amount of motion, light, electricity or magnetism may be evolved from it. The idea of the correlation and equivalence of forces, is the inductive manner of stating that an eternal law of justice rules in the physical, mental and moral worlds. The late experiments in science establish a correlation and equivalence between forces. Thus, the fall of 772 pounds one foot, elevates the temperature of one pound of water one degree Fahrenheit. The proved relation in amount

between the affinities of combining bodies, and the heat evolved during their combination—the quantitative connection between chemical action and voltaic electricity already established—the experiments of Faraday, implying that a specific measure of electricity is disengaged by a given measure of chemical action—the demonstrated equivalence between the amount of heat generated and water converted into steam—the known expansion of steam under the influence of each additional degree of heat, all render it certain that, among the various forms of force, the quantitative relations are fixed. And hence the fall of the sunbeams on the earth, finds its correlative and equivalent in the rise of vapor and the consequent fall of the snows, rains and rivers to the earth and into the sea. silent rush of the planets through the heavens, is but the transformed molecular motion of the original photosphere of the sun. The world of forces obeys the laws of addition, subtraction, multiplication and division, and mind, itself, is a force, or rather the aboriginal source of all forces. Grant a God, an Eternal Infinite Mind, and this correlation and equivalence of forces is but the outer physical ensemble of the inherent laws of divine reason, of eternal distributive justice. This law holds between physical and vital, and vital and mental forces. The more mind a man exhibits, the more blood he burns up or exhausts; and the more blood he exhausts, the more food, light, heat and air he requires. And it holds also between the individual and society, between man and men. This law secures that we get from our fellows-what we pay for-no more, no less. It secures that the quack shall be quacked at last, and the longer the credit given, the heavier the interest which will be ultimately required. If he seems to triumph for a time, it is only that his falsehood may lift him to the verge of his ambition, in order to secure his more complete ruin when he falls; and then his social ruin reduces him to his true level, from which he can, if he will, rise to a more elevated station among his fellows. To illustrate: the dentist, if he be merely an artist-merely a worker in contraband rubber and mineral teeth-a modern Tubal Cain, and not also a teacher of his patient, instructing how to save teeth from decay-may get his full compensation in dollars for his artifice, but he will not command that utter trust, that moral confidence, that sublime fraternity, which is the true compensation for the work of the soul.

There is a higher form of this law of compensation than that which, for a certain expenditure of professional skill, shall fill one's tills with money. All exist for moral as well as for pecuniary benefits, else they are not men. The professions become grand, sacred, blessed, in just the ratio of their actual power to benefit the world. There is something of a practical immorality in the present relations of the professions to the people.

physician thrives on sickness, the lawyer on quarrels, and the dentist on decayed teeth. "Let these professions teach the people how to preserve health, to avoid difficulty, and to prevent the decay of the teeth perfectly, and our business would be destroyed," I hear you say. Very well: which is first and paramount, man, or his diseases and the consequent wealth of the professions? Does man exist, that doctors, lawyers and dentists may thrive? Or do the professions arise to save, to preserve, and elevate man? If one affirm the first, all moral dignity and worth depart the professions; but if the second be affirmed, all the professions become the physical and moral regenerators of society—the grandest moral element enters into their career and function, and the compensation for such professional service is a gradually regenerated, beautified, loftysouled society. Let the people pay us to teach them how to save themselves from the ills incident to a perverted civilization, and we are at once in harmony with all the great interests of mankind and the moral laws of God. The compensation for such relationship is measureless happiness and blessedness. Now it is the financial interest of the physician to have everybody sick, of the lawyer to have everybody in a quarrel, and of the dentist that the people's teeth may rapidly decay. Add the moral law of compensation, and nobody likes the members of either profession named. The people look upon us as "necessary evils." But once let us shift our relations so that we become principally teachers, and incidentally only manipulators, &c., and while the long-continued sins of our ancestors will secure us plenty of patients for some generations to come, we shall yet lay the foundation for a broader and higher professional character, at once consistent with all the laws and interests of man and of society. Nor is this all, since the moral and spiritual laws are primordial, obedience to them secures the highest possible inspiration to genius, talent and intellect. "Talent invariably sinks with character," it must therefore rise with character. Elevate the professions into harmony with the primordial code of nature, which recognizes exact compensation for every act, or failure to act; for every mental effort and aspiration for the highest good, and our professional ranks will be ablaze with genius, with talent and new discoveries. New ideas, a new society will arise upon the world. Great aims alone can quicken genius, and attract it into the centre of social power.

[&]quot;Moreover, a moral compensation reacheth to the secrecy of thought;

For if thou witt think evil of thy neighbor, soon shalt thou have him for thy foe;

And yet he may know nothing of the cause that maketh thee distasteful to his soul—

The cause of unkind suspirion, for which thou hast thy punishment:

And if thou think of him in charity, wishing or praying for his weal,

He shall not guess the secret charm that lureth his soul to love thee."

LOWELL, MASS.

#### REGULATING TEETH.

#### BY DR. C. A. MARVIN.

This is a subject upon which much has been written and said, and upon which much more may be written and said, without any fear of exhausting it. As long as the proper care of children's teeth is so little understood, or so grossly neglected by parents; as long as the numerous known and the still more numerous unknown causes of irregular teeth exist in the world; so long will this branch of dental art possess an ever-new and ever-vital interest to the enlightened members of our profession.

The ability to convert an ill-shaped, deformed, repulsive dental arch into one that shall be pleasing in appearance, useful and comfortable to its owner, is rightfully deemed an evidence of no ordinary skill and competency, while the incalculable benefit thus conferred upon the person so dealt with, is, or ought to be, a powerful incentive to the thorough examination and study of this particular branch

Without pretending to cover the entire field in one paper, I will state some general principles to be observed in the important operation of regulating teeth.

In regulating teeth, several objects are to be attained, and they are always to be kept in mind throughout the continuance of the operation. They are:

- 1st. The preservation of correct facial expression.
- 2d. The restoration of such expression, (if, through the irregularity of the teeth, it has been lost.)
  - 3d. The proper articulation of the teeth for better mastication.
- 4th. Their orderly arrangement, with a view to the prevention of decay. Here is enough for four sermons, but within the limits of a single paper I can only generalize.

Each of the above particulars is of great importance, and ne one of them must be lost sight of in the endeavor to gain another.

As to the means to be employed to secure the desired end, no particular rules can be laid down. The cases, as they present themselves, vary so greatly, that appliances which would be successful in one case, might be utterly inappropriate in another. The adaptation of means must be left to the ingenuity and judgment of the operator.

One general principle may be asserted, however, which it were well if all dentists would observe, and that is this: do not resort to extraction for the purpose of giving room to such teeth as are out of position. This is an error into which many dentists have fallen, and from which have resulted cases of permanent disfigurement beyond the pale of recovery. I do not mean never to extract in regulating, for there is no rule, nor

principle, nor condition to which there may not be exceptions; but I do mean that this method should be the very last resort.

Nature makes all the parts to correspond, and when she supplies a certain number of teeth in the mouth, it is fair to infer that the presence of all those teeth is necessary to regularity and perfection. If they are crowded, it indicates that there is unnatural contraction. What is the remedy? Expansion of the parts, of course. And when this is properly done, and sufficient room secured, with all the teeth retained, a symmetry of outline is observed, which is at once pleasing and natural, and which can be attained in no other way. In the most contracted mouth, by commencing with the first molars, and spreading them, then following with the second bicuspids, and so on, in order, to the central incisors, very rarely will any difficulty be found in obtaining sufficient space for such teeth as may stand outside or inside of the proper circle. In doing this, constant regard should be had to the facial expression, that the incisors be not moved so far outward as to give a swollen appearance to the lip. there is danger of this result, the bicuspids or molars should be made to furnish the largest share of the space required, as these teeth can be well spread without materially affecting the appearance of the cheeks. Two methods of accomplishing this end are in use, both of which are effectual. One is by fitting a plate to the roof of the mouth, (if the upper teeth are to be regulated,) with broad collars next the teeth which are to be spread. Between these collars and the teeth, wedges of dry pine wood or rubber are to be inserted as tightly as possible, and changed every day; thicker ones being substituted, until the teeth are moved as far as is desired. A second method, and an excellent one, is by making a bow of stiff gold wire, long enough to pass entirely around the teeth, from molars to molars. Fit gold caps accurately to the crowns of the last molars, on each side, and solder the ends of the gold bow to the buccal surfaces of these caps. When this appliance is firmly fixed in the mouth, elastic ligatures passed over the teeth which are to be moved, and attached to the bow, will draw them in any desired direction, and to the requisite extent.

It is, of course, unnecessary to say that, after the teeth are brought into their proper place, a retaining plate must be made, which is to be worn until they are firmly set in their new position. The length of time required for this varies in different cases, from three to twelve months. It is of the utmost importance that this retaining plate should be what I have called it—a retaining plate. The teeth which have been brought from an improper to a proper position, should be held there immorably, that there may be nothing to prevent the perfect filling up of the alveolus, or tooth socket, closely around the roots of the teeth. If they are allowed to move backward and forward, nature cannot accomplish her

all not become firm. Attention to these little matters prevent much dissatisfaction to patients, and mortification

age when art should be called in to aid nature, opinions vary. rid nature, by which I mean that this should be done at some . the period of growth. While a tooth is growing, a very little will change its direction, while much would be required after it is developed, and growth has ceased. But if begun too early, evil y ensue. Nature will many times, entirely unaided, correct irregurity. To employ artificial means, therefore, in such cases, would be not only unnecessary, but, perhaps, hurtful, by producing unnatural irritation, or by inviting early decay through the friction of metallic appliances upon tender teeth, or by making convenient lodging places for particles of food to remain until partially decomposed. If, on the other hand, the treatment be delayed too long, either or all of the following evils may ensue: loss of some of the teeth in consequence of the too great rigidity of the parts for successful expansion; or difficulty of retaining the teeth in their new position, owing to the more tardy adaptation of the parts, and the slower formation of bony tissue in and around the roots; or the dangerous luxation of the teeth in consequence of prolonged traction, which tends to greater protrusion of the organ.

All these considerations, and many more which cannot here be enumerated, must be borne in mind in determining the proper time to commence the use of artificial means.

The nearest to a rule which I can give, is this: to commence as soon after the necessity is apparent, as the dentist can determine this point, viz: that the eruption of teeth yet to come, or the subsequent growth of those already erupted, shall not undo his work; in other words, when he sees that the teeth he may succeed in regulating, are in no danger of being pressed out of position again by the new and growing teeth, and thus the repetition of the operation rendered necessary.

The earlier the operation can be commenced, consistently with this caution, the better.

Too great haste should also be avoided. Harsh measures in treating teeth, especially in the mouths of the young, are to be strongly deprecated. Teeth are delicate organs, and if a regard for the feelings of the young patients has no weight with the dentist, (which it certainly should have.) let this thought have weight, viz: an amount of irritation may be produced, which may result most disastrously. Slow, steady and unremitted motion is proper, but I have no sympathy with the sudden and harsh pulling and prying of teeth from one position to another. Gentleness, all the gentleness consistent with progress, should be practiced in every operation.

# SENSITIVE DENTINE-ITS CAUSE AND TREATMENT.

BY DR. W. C. HORNE.

In order to enter intelligently into any method of obtunding the sensitiveness of dentine, it is necessary to be acquainted with the structure of that tissue. It would add greatly to the interest and usefulness of dental associations, if a part of their time were devoted to microscopical examinations of sections of teeth. A general lack of information on the minute anatomy of these organs exists, which cannot be too speedily corrected.

The hard structures of the teeth are divided into enamel, cementum and dentine; all possessed of vitality, but varying in their degrees of organization. Dentine is composed of an intertubular tissue, which serves as a matrice for innumerable tubes, commencing at the pulp cavity, from whence they radiate toward the surface of the tooth. In their course through the dentine to the enamel or cementum, they give of branches, which run into one another, and terminate in dilatations at the point of junction between the dentine and the enamel, which they also occasionally penetrate.

The dentinal tubes were supposed to contain only a fluid, until Mr. Tomes demonstrated their occupancy by soft fibrils proceeding from the pulp: * up to that time it was conjectured that the sensibility of the tissue proceeded from pressure of the liquor sanguinis back upon the dental pulp. Mr. Tomes very justly shows that sensation is not a property of fluids, and that this hypothesis would entirely fail to account for the variation of sensibility in different parts of the same tooth. Accepting the view that these fibrils are organs of sensation, though not necessarily nerves, and that they supply nourishment to the dentinal structure, we easily arrive at the inference that to their presence is owing its sensitiveness and to their absence is due the low sensibility of the enamel. Such a conclusion is strengthened by the increased sensibility discoverable at the periphery of the dentine, corresponding in this particular to the general rule that the highest degree of sensibility is to be found at the termination of nerve filaments; while its immediate and total disappearance upon devitalization of the dental pulp may be taken as conclusive evidence.

In a healthy, well-organized tooth, no part of the dentine is exposed, and it is only after the enamel has been penetrated that any marked degree of sensibility is developed. The use of the enamel is to protect the dentine from injury; while, in its turn, it is protected by a structure-

[&]quot;'That the fibrils p oceed from the pulp, may be seen by carefully fracturing a fresh tooth, with as little displacement of the fractured parts as possible, and then, by slowly removing the pulp from its place in the tooth, we shall be enabled to examine the fibrils which have been drawn out from the tubes."—Tomes' Desial Surgery, pp. 329, 330.

ATTIVE DENTIN BE-ITS CASUE AND TREATMENT. described by Nasmyth, after whom it is esorioed by hashing, by Kollicker. It found in the mouth, yielding only to hydrobrane actually, as it is theoretically, contooth surface, it would appear that the eserved intact. Hence has arisen the r cause of dental caries is a lack of ondarily, defects of quantity or res in its surface. If an acid n the enamel will be itself ormeate the dentine.

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f vitality; after which e oral fluids; there l. This process. action in the dentine grene in the soft tissues by at this effort be successful, the y the consolidation of the dentinal ag the dentine much more dense and ease is circumscribed, decay is arrested, the

smooth and hard, and the tooth does good sergreat number of cases, however, the consolidation great number of course, any effectual barrier to

great difference found in the sensibility of dentine, in a variety of is as difficult to account for as other constitutional peculiarities. very scute, it has been designated as inflamed by some writers: this cannot be accepted as a correct term, when so many of the disthis features of inflammatory action are absent. Where decay has Bulled a highly irritable state of the dentinal fibrils, it frequently becomes to palliate this condition. Pain is based produce to palliate this condition. Pain is beneficent as an expression necessary deranged functional activity, and, in the present case, is valuable as an of deranged function of destructive agents. of deraction of the action of destructive agents. Our efforts should then be directed to a practical application of and directed to a practical application of such means as we have for first the irritability of the structure, which is often an indispensable prerequisite to perfection in the operation of filling.

Of the therapeutical agents in commonest use, creasote or carbolic acid the first attention. These escharotics have so powerful an affinity claim subunen, that they eagerly combine with it to form a carbolate. This for albumen, instantaneously on their terretion for any of the month, and their effect of the mucous is opposed of the mouth, and their effect, though not so apparent, is idenmemorial tubuli. They should be applied delicately, and tical upon the dentinal tubuli.

their effusion into the mouth prevented by stopping the cavity with cotton saturated with a solution of gum sandarach. Their effect, after a few days, is generally such as to permit of excavation, with only a moderate degree of sensation. Nitrate of silver is very effectual in cauterizing flat exposed surfaces. Chloride of zinc, though painful on application, soon diminishes sensitiveness; its first effect may be allayed by chloroform, which is recommended for bathing the walls of cavities. An excellent preliminary to further dental operations is the frequent rinsing of the mouth with lime-water, and rubbing precipitated chalk into the cavities of decay. Sulphate of morphia is often used with success, and is not deleterious, if left for some time in the teeth. When other means fail, arsenious acid may be relied upon for effecting insensibility. It has been extensively used for this purpose, and often with results far beyond what were desired; being so powerful as to penetrate the dentinal tubuli, and communicate its de-vitalizing influence to the pulp. Too much caution cannot be observed in its use.

The simplest means are often the best, and no more satisfactory result have been attained than by simply filling deep-seated or more shallow cavities with some temporary material. The various preparations of rubber, and bone filling, (oxy-muriate of zinc,) answer excellently for this purpose, affording an opportunity, by exclusion of exciting causes, for the action of the conservative processes of nature, manifested, in the organs under consideration, by consolidation of the dentinal tubes and the deposit of secondary dentine by the external cells of the pulp. Such cases have come under the observation of every intelligent practitioner, and need no examples to sustain them. Constitutional conditions undoubtedly affect the condition of the teeth, and go far to determine the means and possibilities of their successful treatment. The experience and evidence presented on this branch of the subject is at present far too limited to form a reliable basis for operation. We have the whole of this field open before us, inviting competitive investigation. Doubtless the laborers in it will be amply rewarded.

NEW YORK CITY.

#### FILLING APPROXIMAL AND CERVICAL CAVITIES.

BY DR. C. E. FRANCIS.

These are usually considered among the most difficult of cavities for a dentist to fill, and his ingenuity, patience and temper are often taxed to their utmost tension in his efforts to make such operations perfect. The almost inaccessible position of many of these cavities; the insufficiency of light when they are located on the posterior surface of some of the molars: the excessive flow of saliva, frequently gushing with a perfect deluge from

the several ducts: the nervous, restless manner at times exhibited by the patient, together with various other perplexing difficulties that occasionally occur, all tend to baffle the best efforts to make our operations as perfect as could be desired. With those who make an unscrupulous use of the file, or deal by the wholesale in plugs of amalgam, the difficulties referred to are easily conquered; but where plugs of pure solid gold are to be introduced, and the original contour of the teeth preserved or restored, the case is different; and we must prepare ourselves as well as possible to meet and overcome these difficulties.

To be practical, let us refer to a few cases with this point in view. We will suppose a cavity to be located either on the anterior or posterior approximal surface of a superior bicuspid. Such cases are common. Perhaps the cavities are near neighbors, facing each other. We will commence here. Drive a wedge of orange wood between the two teeth, as firmly as possible; with a chisel or file cut away the jagged edges of each cavity, and, with properly shaped excavators, carefully remove all the decayed dentine. With a spoon-shaped, keen instrument, trim the cervical wall of the cavity thoroughly; now, with small fine-cut files, bevel the edges of the cavities, (so that the plugs will envelope them when finished,) and polish them with small sticks of Lake Superior stone. Drill several retaining points into the solid portion of the dentine, keeping clear of the pulp. If but a thin plate of enamel remains between a cavity and the crown (or grinding) surface, cut it away, leaving a dove-tailed opening. Now withdraw the wedge, and apply "Barnum's sheet rubber dam;" for, to insure perfect success, it is absolutely necessary that the cavity and gold be kept perfectly dry. Even the moisture from the breath, as it condenses upon the metal, will, in a measure, destroy its adhesive properties. Having adjusted the rubber, drive in a new wedge, if required, and you are ready for the operation of plugging. Do you prefer foil? If so, try the adhesive, No. 2. Roll, and cut it in small pieces. Commence with the retaining point of the cervical wall most distant from the entrance of the cavity, where the gold should be well packed, and a foundation firmly secured. Now, with serrated pluggers, well pointed and impelled by the magic influence of the mallet, consolidate each successive layer of foil, until the cavity is more than full, and the margin of enamel well overlapped. Finish the surface with fine files, corundum tape, Lake Superior stone, ground pumice, or rouge.

For labio-cervical cavities of the incisors, or bicuspids, the sheet rubber can also be used, generally to great advantage, even where the cavities extend beyond the margin of the gum. These cavities are usually quite superficial, and require to be well shaped.

Recently, a professional friend made several attempts to plug such a

cavity, but each time failed, the gold getting damp from the moisture exuding from the margin of the gum. We suggested rubber; but he declared it could not be applied in this case, for the gum had somewhat receded, and the cavity extended beyond the line of enamel. Our assistance being proffered, was accepted. A piece of rubber, about an inch in width by two in length, was procured, and through which a small hole was cut, in circumference a trifle larger than a pin's head. This enclosed the tooth, and as much of its margin as possible was turned towards the alveolus. The portion of rubber above the cavity was drawn firmly against the gum, to be held securely by the fore-finger of the left hand during the operation of plugging. The plug was introduced, with comparatively little trouble, and greatly to the satisfaction of the operator.

In filling cavities on the buccal surfaces of the molars, more difficulty is experienced in adjusting the rubber dam. When impossible to do this, I find prepared spunk, which can be obtained at the dental depots, the best substitute. This can be cut in various sized pieces, and readily changed when it gets damp. It absorbs the moisture very nicely. Where this cannot be procured, I would suggest bibulous paper as next in value. Annealing the gold before introducing in the cavity, renders it more adhesive. The first few pieces work best unannealed. Avoid having the pieces too large, lest they choke the cavity, and become insecurely packed.

For more explicit directions concerning the application of "Barnum's dam," I would refer the reader to an excellent article from the pen of Dr. Horne, published in the last number of the DENTAL TIMES.

NEW YORK, December 11, 1866.

### QUARTERLY NOTES.

The interval since the last issue of the Dental Times has been replete with matters of interest to the dentists of the country. Prominent among these is the extensive litigation inaugurated by holders of rubber patents. From all quarters the cry comes up, and we hear of injunctions, summary proceedings, threats and executions, in a mixed jargon which puzzles, if it fails to terrify. With a unanimity as general as it is commendable, the dentists of every locality within our knowledge have associated themselves for mutual defence. They are an honest, hard-working body of men, and, while able and willing to give every one his just rights, are not quite ready to be sold out for the benefit of any company.

Without a claim other than the supposed helplessness of the victim and the richness of the prize, a disgraceful compromise was urged upon the late American Dental Association, having for its object the enrichment of the latest offspring of a monopoly which has become a stink in the nostrils of the nation, to which the dead frogs of Egypt bear no comparison.

The Association was disgraced by listening to any terms, save those of fighting to the end against an imposition so gross. Such was the instruction given to the Commissioners, and had they carried it out, they would have received the support and the applause of the profession; but, instead, they reported the Cummings patent a swindle, and then ran away in different directions, leaving the Vulcanite Company masters of the situation. These have not been slow to improve their opportunity, laying down, as the conditions of holding their licenses, terms which are repugnant to every manly and professional sentiment. Make haste, Messieurs Commissioners, to deny the part ascribed to you in this arrangement, or else be sure you will be remembered and condemned by your outraged brethren. But what measure of contempt and obloquy shall be poured upon those who fain would sell their fellows for a mess of pottage? May their gold become dross, and their stock food for moths, and let their names be a bye-word and a warning to posterity. Thus may it be to the men who violate professional faith and honor for filthy lucre. The terms and conditions laid down in the license of the company referred to, have never been substantiated by the signature of any officer of the Association; they were commended by a local influence, whose judgment, to say nothing of interest, was at variance with that of the great preponderance of delegates present, and have been unanimously repudiated by the profession at large. Nothing more impious was ever put upon a body of professional men. Rather abandon the use of rubber than submit to it. Meantime, let every dentist in the land unite in an effort which shall rebuke and disappoint the plotters of this Dental Vulcanite Company.

When the local struggle has given place to the general engagement; in other words, when the trial of the validity of the patents shall have been carried to the Supreme Court of the United States, we would urge upon every dentist in the country to unite in a common cause, for self-protection and defence.

Recurring to the annual gathering in Boston, (and let us hope, in parenthesis, that there will be no snare laid for us in Cincinnati,) the Code of Ethics there adopted does not commend itself to the requirements of the day. The wisdom of urging matters of local origin and extraneous interest upon this delegated body, is more than questionable; the Association has no power to enforce such laws, and meddling where it has no authority, is likely to breed contempt. Let us hope that no more of this class of special enactments will occupy the time, so unfortunately, of a body whose deliberations should be purely scientific; and when we talk science, let us not run mad on speculation.

An unwonted interest has lately been aroused in microscopical studies of the dental organs, directly traceable to the sharp passages at arms

between two well-known writers. This controversy has been narrowed down to the question, puzzling to some—Do the dentinal tubules cress the interglobular spaces, or do they underlie or overlie them? Some smart fellow proposes to settle the doubt by obtaining a transverse section, of the thickness of the tubules. Possibly a longitudinal one might better answer the purpose. How unfortunate is it, that owning a fine microscope does not make a man a microscopist. It is to be hoped that the new Committee on Histology will elucidate the subject in their annual report.

We had confidently expected, ere this, to have received from the Publication Committee the Transactions of the American Dental Associative. This work was placed in the hands of a committee on the spot, to insure an early issue. Present appearances point to a repetition of the fiasco of last year. Perhaps by another year the Association will be satisfied with a briefer report, which shall also be more prompt in its appearance.

Anæsthesia, in its lavest phase—Dr. Richardson's local application is eliciting attention in the dental colleges, and at the hands of private practitioners. It may be premature to decide upon its merits for dental purposes, as it has not yet been extensively tested, though it has proved of undoubted advantage in other departments of minor surgery. The enthusiasm with which it is recommended for the de-vitalization of exposed pulps, and allaying sensitiveness of dentine, by no-wise "timid" practitioners, is refreshing. The profession will hold itself indebted to Dr. G. T. Barker, for his valuable work on Nitrous Oxide, as a candid and trustworthy manual, indispensable to every dentist who would be informed of the nature and effects of this agent.

We cannot forbear to notice that both the volume just spoken of, and the excellent instructions of Dr. Wildman on Manipulating Hard Rnbber for dental purposes, have emanated from Professors in the Pennsylvania Dental College. The fact augurs well for the institution in which they teach.

My attention has recently been directed to the curious effects of nitrous oxide, which may be thus described: A Western friend has lately been going into "gas," and thinks so much of it that he inhales as much as he administers. The funniest of all the fun is, that he writes for a certain journal while under its effects, and by turns plays Merry Andrew and scold; and, to beat all, his articles have pleased the proprietor so much as to have obtained for him the editorship.

The progressive spirit of the day manifests itself in the general desire for an advanced stage of educational acquirement in our profession. The seed sown through many years of discouragement now begins to bear fruit-Since the day when the first dental college was instituted, with two professors and one student, through the intervening years which have brought into existence several others, the pioneers have found their labor arduous and their reward uncertain. The classes of the present winter, which far exceed those of any former year, must give satisfaction, at least, to those who have borne the heat and burden of the conflict, which has resulted in making a dental collegiate education indispensable to the young men who are daily entering practice.

An association, comprising the faculties of the Baltimore, Ohio, Pennsylvania, Philadelphia and New York Dental Colleges, has been formed during the autumn, having for its object the adoption of a common base of requirements for graduation from these institutions, which, if lived up to, must go far toward removing all temptations to ungenerous rivalry, and secure mutual regard and respect.

The present aim of our colleges should be to make a diploma a necessity to every practitioner of dentistry: and this object is to be reached, not alone by graduating young men just beginning their career, but by judiciously conferring the same title upon practitioners whose works have proved them worthy of all the honor or distinction the title of D. D. S. can bestow; but who, at the same time, may be unable, at this late day, in the full pursuit of professional duties, to devote their time to hearing lectures on subjects they may be themselves qualified to teach. Such a course would be advantageous to the colleges, and redound to the best interests of the profession.

The nurseries of the dental colleges are the dental societies. These are steadily increasing in numbers and in power. They are so frequently in session, that their influence is exercised continuously, and it is controlling upon large numbers; they have accomplished much good. The proceedings of these bodies are often of great interest, and while they serve to disseminate advanced views of the theory and practice of dental surgery, they also perform a hardly inferior office of inducing a professional esprit du corps, which cannot be too highly valued. Without vain-glorying, may we congratulate ourselves upon the dawn of the day when something beside skillful manipulation will be taken as the highest criterion of excellence among dentists. Those alone who appreciate the importance of scientific attainments, can secure for themselves a high standard in the future.

Taking a rapid survey of contemporaries for the past year, we feel that the TIMES may congratulate itself on the comparison. A large, and in some a preponderating, portion of their space is occupied by selected matter; the reason for the selection being often very dubious, the soissors having apparently usurped all the editorial functions. Reports of dental societies, too, abound; if well prepared, these discussions doubtless fur-

nish interesting information to a large class of readers, serving also to mark the steps of advance in different particulars. But why so many pages should be devoted to the announcement that Drs. (?) So and So were present, and having met in doubt parted in confusion, is more than we can account for on any known principle of editorial management. Many of the original contributions are of a practical nature, and valuable; those of a scientific turn sometimes fly over the heads of the readers so wildly as to leave room for the inquiry whether the writers knew what they were aiming at. The fact cannot be gainsaid, that the mass of the contributions to our current dental literature are slovenly in the extreme, even when they have claims to consideration for the value of their suggestions. Editors sometimes revolve in very eccentric orbits, exhibiting a capacity for "pitching in," which is amusing to lookers on, who fail, however, to discover anything profitable or dignified in their aberrations.

We notice, in various quarters, a disposition to enlarge the sphere of the dentists' operations, by including all surgical operations necessitated by diseases connected with the mouth. There can be no objection to any one's pursuing the study or practice of general surgery, who so desires: but there is a large enough field for investigation left within the proper range of dentistry to employ the abilities of our ablest men. Ours is a specialty, confined by its name and nature to the dental organs, and we may as well enter into the general practice of medicine as of surgery, because the condition of our patients happens to require general treatment. More anon.

Yours,

Unknown.

### Editorial.

THE TIMES presents its usual yearly greeting, and wishes to all its readers a Happy New Year, and many returns. At the commencement of a new year it is always of advantage to take a retrospective view of the past, and make provision for improvement in the future. In performing this review, we feel proud of what this journal has accomplished, and we earnestly express our thanks to our many contributors who have so generously aided us in our efforts to make the Dental Times a necessity. Of the editorial corps, but a brief notice is required, as their efforts in the past are but indications of what they will perform in the future. Professor Buckingham will continue his articles on different metals, with their applications to dentistry. Professor Wildman will contribute still further on the subject of Caoutchouc—essays which have attracted marked attention in this and other countries. Professor Truman will, as heretofore, bring to notice valuable suggestions in operative dentistry, while the

writer proposes to take up for consideration the various therapeutical agents indicated in dental disease; the present number containing the first of the series on Aconite. Of our contributors, we would remark that this number may be considered an indication of their ability as writers; for where could be found more able essayists or practical workers than Drs. Lawrence, Marvin, Francis or Horne? These, and others as worthy, we hope often to introduce to our readers. Our "unknown" correspondent promises to favor us with Quarterly Notes. His arrows, though shot with boldness and fierceness against error and injustice, will never be poisoned with malice, while there will be complete avoidance of unprofitable personalities. As this gentleman, (a member of the profession in a distant city,) is one who keeps "his ears and eyes open," we expect that his quarterly communications will be both entertaining and instructive.

As this journal is so intimately connected with the success of the Pennsylvania College of Dental Surgery, we cannot refrain from stating that this institution does not, as yet, feel the weight of accumulated years, but that the class the present session is larger than that of any previous one. That the Times has done much to accomplish this result, must be evident to all. In closing this brief notice of our present and future prospects, we ask our friends not only promptly to return their own subscriptions, but to aid us in so extending the circulation of this journal, that we may continue to represent the advancement and interests of the dental profession.

G. T. B.

#### THE DENTAL PROFESSION vs. RUBBER PATENTS.

WE devote considerable space, in this issue of the Times, to the question that is now agitating the profession to a very considerable extent—that of the validity of the Cummings and Goodyear's patents. Whether these patents can be sustained, or whether they are worthless, remains yet to be solved by the courts; and until this is done, and a decision rendered by the Supreme Court of the United States, it seems to us to be the true policy to refuse to settle with the "Goodyear Vulcanite Company" for past work, or to enter into any obligations for the future.

The feeling appears to be almost unanimous in the profession that the claim of Cummings to have originated the use of rubber as a base for artificial teeth, to be not only a pretension, but an attempt at wholesale swindling under the cover of law. Whether this feeling is warranted by the facts, remains yet to be proved; but that it exists almost universally, is some indication that his portion of the claim, at least, cannot be sustained.

At the Boston meeting of the American Dental Association, the subject of a settlement with the holders of these patents, termed the "Goodyear

Vulcanite Company," was prominently and persistently introduced by certain parties, who finally succeeded in procuring the appointment of a committee to confer with the Vulcanite Company, with power to adjust all claims. They concluded upon terms of settlement, a copy of which is appended. That the Convention exceeded its powers in appointing any committee for such an object, there can be no two opinions. The delegates were not clothed with any such authority by the associations that sent them to that body, and had they been so delegated, their action could have no binding effect on the profession at large. In our opinion, the Convention in treating with the company in the manner they did, or to even allow the subject to be introduced, sacrificed the dignity that should always belong to such bodies. We would not be understood to favor that false dignity that would refuse to receive information, or to examine any model or improvement, because the individual may have received a patent for it; but we do condemn the chaffering with a company who back up the application for a committee with a threat that thus and so must be done, or more will be demanded. That this committee was formed by direct application from the company, we do not pretend to assert; but there is strong presumptive evidence that such was the fact. But whether true or not, the discreditable fact still remains, that a committee was appointed to make the best terms possible. But few members of the profession but have felt annoyed and chagrined at the action of that body. It has been stated, and very generally credited, that a portion of that committee were directly interested in the stock of the Vulcanite Company. Whether this very general feeling has any foundation in fact, we have no means of determining; but we do say, that if the next meeting of the American Dental Association fails to sift this matter to the bottom, they will deserve and receive the condemnation of all right thinking men. Any member of that Convention that can be proved to have any connection with the Goodyear Vulcanite Company, should be unceremoniously expelled, and branded so deeply that the future history of the profession may not be stained by any such record.

The terms that this company require of the licensee are of a character that no one, who entertains the least respect for himself or the profession he represents, should accept. The contract requires the individual, among other things, to furnish a "description of all plates or parts of plates, and the names and residences of the persons to whom furnished, and the dates when furnished." Is there any member of the profession that would voluntarily sign such a gross violation of the privacy of professional practice as this? It has become a rule, that should have no exceptions, never to speak to others of any operation, so that the individual operated upon can be recognized, and this is eminently proper. All persons are, in

greater or less degree, sensitive to anything that affects them personally, some, perhaps, unreasonably so; and in nothing is this feeling more apparent, than the use of artificial teeth. If it is centrary to all professional good breeding to do this incidentally to a stranger, how much more so to furnish a written quarterly report to these meddlers in other people's business, and allow them free information on this most delicate point? Rather than submit to this degrading requirement, it would be far better to return to the use of gold, silver and platina as a base for artificial teeth. The feeling may be that we have gone too far into the use of rubber to accomplish this, and such may be the fact; but patients generally take the advice of the trusted counselor, and there need be but little difficulty in convincing them to their best interests. Many dentists have adopted this course, and not from any fear of courts and juries, but from a conviction that rubber for general use has proved, if not a failure, at least far inferior to the old modes of mounting teeth. Let the decision of the courts result as they may, we think this feeling must increase among those who have the best interests of the profession at heart. That rubber has degraded dental mechanism, there can be no doubt. We have, growing up among us to-day, young men who go forth to practice, that know little or nothing of plate work, and have but the slightest possible knowledge of all that extensive practice in mechanics that went so far to make up the pupilage of a dental student, before the advent of rubber as a base for teeth. The thought and labor of multitudes of men for years, all goes for nothing to-day, and we have almost returned, as far as mechanical dentistry is concerned, to that period when three weeks study and pupilage were considered sufficient to enable an individual to commence practice. The consequences have been and are deplorable. We may not, in recommending a return to original practice, have hit upon the right remedy; but we do think the period a proper one to make an effort in that direction.

There seems to be a very general determination to resist the claims of the company, and we of this city have organized a committee to take the whole matter in charge, collect moneys to defend all subscribers to the fund, employ proper counsel, &c. To accomplish this, requires ample means, and we would call special attention to the circulars we have issued, and we hope that all parties interested will forward their subscriptions as speedily as possible, and do this whether they have settled with the company or not; for they must bear in mind that this onerous tax is to be levied, with all the conditions, for a period of seventeen years.

The following is a copy of the conditions upon which licenses are granted, and also the contract required to be signed by the licensees:

"By an agreement with a commission of five gentlemen, consisting of Drs. O. W. Spaulding, of St. Louis; E. G. Leach, of Boston; A. Hill, of

Norwalk, Conn.; W. A. Morgan, of Nashville, Tenn.: and J. M. Rigga, of Hartford, Conn., appointed at the last annual meeting of the American Dental Association, with full power to adjust all matters of common interest between the company and the dental profession, the following terms of settlement of past infringements and of licenses for the future, have been decided upon, viz:

- "(1.) Upon prompt settlement, an entire release, without charge from liability for damages for infringement between June 7, 1864, and May 1, 1865.
- "(2.) A discount of 50 per cent. of the rates established for the future to be made for all work done between May 1, 1865, and July 1, 1866.
- "(3.) The amount paid on the past to be refunded in equal yearly instalments of 20 per cent. from the amounts that may become due under the license.
- "(4.) The tariff after July 1, 1866, to be \$1.00 for each and every part of a plate bearing six teeth, or less, and \$2.50 for each and every plate bearing more than six teeth.
- "The mutual agreement, as above set forth, was endorsed by the commission, and, on presentation to the Dental Association, was ratified by that body.
- "You will please forward to this office, without delay, a correct statement of the number of plates and parts of plates made by you, or by any person or persons in your employ between May 1, 1865, and July 1, 1866; upon settlement of which claim for the past, the company will issue you a license from the first of July, 1866; by which licensees are required to make returns, and due payment, at the tariff rates, at the end of each quarter, for all work done during that quarter.
- "You are hereby cautioned against infringing upon the rights of the company, by using rubber for dental purposes without a license.
- "Any further information relative to the company, its patents, licenses, &c., can be obtained on application personally, or by letter, to the undersigned, at the office of the company, No. 46 School street, Boston, Mass.

  "Josiah Bacon, Treasurer."

To General Agenl Goodyear Dental Vulcanite Company, Boston, Mass.

all my work in which rubber or any allied gum has been used in any way, for all the time named, and that it is in all respects true.

DATE.	NAME.	RESIDENCE.	DESCRIPTION.  Whether upper or lower set; full or partial plate; and, if partial, how many teeth.

The following is the opinion of the counsel of the Americal Dental Protective Society, New York, George Ticknor Curtis:

Dr. T. G. Wait, Chairman of Executive Committee of the American Dental Protective Society, New York:

New York, Nov. 4, 1866.

DEAR SIR—I have carefully examined the re-issued letters-patent granted to the "Dental Vulcanite Company," January 10th, 1865, for an invention purporting to have been made by John A. Cummings, and am of opinion:

First. That the subject matter described and claimed in the specification, is not a patentable invention, assuming it to have been first practised by said Cummings. It is, on its face, a patent for making dental plates of vulcanized rubber, or hard rubber, or "vulcanite," in lieu of gold, silver, platina, or other metal. In other words, it is a patent for making a thing of a substance which the patentee does not claim to have invented, in the place of other substances of which that thing has long previously been made. Mere change of material in making a well-known thing, although the new material may be attended with some comparative advantages, will not support a patent. This patent covers nothing more than such a change of material, and, in my opinion, is void.

Second. That this patent is void, by reason of the following facts: The original application of Cummings, for a patent, on this alleged invention, was made April 12th, 1855; was rejected by the Commissioner February 5th, 1856, and no appeal was taken from that rejection. Eight years afterwards, to wit, March 25th, 1864, Cummings made a new application, and thereupon, the original patent, now re-issued, was granted. I have carefully examined the ruling recently made in Boston, by Mr. Justice Clifford, and find that he held this patent to be good, on the ground of a technical continuity of the first application by reason of the second, which the learned Judge treated as having been filed in aid of the first; and that, therefore, there was no legal abandonment of his invention by Cummings, notwithstanding the interval of eight years, during which

time there were no proceedings in the Patent Office, after a rejection, and during which period the alleged invention had come into public use. I am of opinion, that none of the previous decisions of the Supreme Court of the United States warrant this ruling, and I do not think it will be sustained by that court, if carried before it.

Third. That from the facts which have been laid before me by you sat other dentists, Cummings, even if he were the first person to use "vulcanite" in making dental plates, actually abandoned his alleged inventes to public use. In the case before his honor, Judge Clifford, which was a final hearing in Equity, all that the learned Judge said on this subject is comprised in this statement: "Actual abandonment is not satisfactorily proved." In any new proceeding in Equity, the evidence on this point if conflicting, may result in an issue to a jury, or it may be passed upon by the court. I am of opinion, that the result of the finding upon the point, in the case heard before Judge Clifford, is not of sufficient weight to deter any one from raising the same question upon the facts which have been submitted to me.

Fourth. That from the facts which are well known to exist respecting the long public use of this alleged invention by members of your profession, in this city and elsewhere, the Federal Courts, sitting in Equity. ought not to grant, and, upon the principles of Equity Jurisprudence as administered in patent cases, will not grant injunctions before a final hearing. If such injunctions are granted, of course they must be submitted to, and the cases must be prepared for a full and final hearing on the merits.

Having understood from you that an association has been formed in this city among the dentists, for the purpose of protecting themselves and each other against the claims advanced by the proprietor or proprietors of this patent, and having accepted a retainer for this purpose, I deem it proper to add that, in my opinion, the case is clearly one that ought to be carried to final adjudication in the Supreme Court of the United States: and that not only your own profession, but the kindred professions of Medicine and Surgery, will render you their moral support in subjecting it to such adjudication.

I have not thought it necessary to cover, in this opinion, any but the most prominent grounds of objection to this patent. There are others which appear to me equally fatal to its validity.

I am informed that suits in equity have been commenced against you and other dentists, in aid of this claim of the Cumming's Patent, upon the Hard Rubber Patent of the late Nelson Goodyear, in the name of his administrator. One of these bills in equity—that against yourself—

have examined. It sets forth no adjudication in which the Nelson Boodyear Patent has been sustained, against what I believe to be a ormidable objection to its validity.

Without going at large into the various defences, which may be made to the claims now sought to be enforced against the dentists, by the proprietors of the Goodyear Hard Rubber Patent, I am prepared to express my opinion, as follows:—

First. That the substance called hard rubber is, according to the specification and claim of the re-issued Nelson Goodyear Patent, produced by a variation in the rule of working originally discovered and patented by Charles Goodyear; and that it is, therefore, extremely doubtful, whether, either in respect to process or product, the making of hard rubber could be the subject of an independent patent. I do not understand that this question has ever been passed upon by any Circuit Court of the United States, and it is certain that it has not been acted on by the Supreme Court of the United States.

Second. That assuming the Goodyear Hard Rubber Patent to be, in all respects, valid, I am informed that it is capable of proof, that the use of hard rubber, in dentistry, in this city, has been notoriously public and free, for a period of eleven years; with the acquiescence of the proprietors of the patent. I am, therefore, of opinion, that as to the use of hard rubber, or of the process of making it, in the art of dentistry, there has been a dedication of it to public use.

Third. That even if the proof should fall short of establishing a dedication to public use, there has been such an acquiescence, that no Court of Equity would be warranted in enjoining its use, before a final hearing.

I am, very respectfully, your obedient servant,

GEO. TICKNOR CURTIS.

Since the foregoing opinion was given, an effort has been made in the Circuit Court of the United States, for the Southern District of New York, to obtain injunctions under the Goodyear and the Cummings Patents. . This effort was utterly defeated. Judge Nelson refused to interfere before a final hearing, and said, (addressing Dr. Wait's Counsel):—

"I have no question about the propriety, in the case presented, of giving you longer time to meet the bill, both as respects the Hard Rubber Patent and the Cummings Patent, the latter being a patent which I know nothing about, and have never seen. The only doubt in my mind—the only question which I was pausing about—was, whether, after the great delay in instituting this suit on behalf of the hard rubber patent against this application of it by the dentists, I really ought to interfere by this summary process of injunction. It seems, from the statement, that they

have been in the use of it some eleven years; and, although I agree that that is no defence to a patent, yet it is a reason, very often assigned. why a Court will not, under circumstances where so long a use has been acquiesced in by the patentee, tie up business by this summary proceeding of injunction, but rather leave the party to go to his proofs and dispose of the case on its merits. That is the only doubt I have now about it."

After further discussion, the Judge finally said :-

"Now, an injunction in this case, whenever it is issued, is not confined to this suit; it is not confined to any district of the country, it is universal, because this profession extends to every county in the Union, and they have been using it for a long time. I don't say that their using it for so many years removes their responsibility at all; but then it deeply affects extensive interests, and I am not disposed to be precipitate where such is the case; on the contrary, I am rather inclined not to act upon it until the question is finally decided, and when an injunction would be an end of the case."

#### CIRCULAR OF COMMITTEE APPOINTED BY PHILADELPHIA DENTISTS.

DEAR SIR:—At a meeting of dentists and others interested, held in Philadelphia, on Tuesday evening, November 27th, the undersigned were appointed a committee to solicit contributions to a fund, to be created for the purpose of testing by law the equity of the claims now being made by parties holding patents, by which they assume to control the use of hard rubber or vulcanite, so for as the same is applicable to dental purposes.

Believing that these claims are neither just nor legal, we propose in protecting the rights of the dental profession, to employ able counsel, and an expert to collect testimony and make a more thorough investigation and defence than isolated individuals defending for themselves can afford.

The settlement of these questions will affect the interests of nearly every member of the profession in this country. If you desire to have a thorough investigation, you are invited to co-operate by remitting immediately the amount you are willing to contribute for the purpose. Contributions have been received in this city ranging from ten to one hundred dollars.

The committee have full power to collect funds and employ counsel according to their best judgment, but are not expected to take any action in the matter, until a sufficient amount of money to meet the necessary expenses shall have been deposited in their hands.

When, by reason of success or failure, we shall decide that further action is unnecessary, the amount, if any, remaining in our hands, shall be distributed to the contributors, pro rata, accompanied by a report of the disposition made of the funds.

Contributions will be received and acknowledged by any of the committee.

Dr. James Truman, 1221 Spruce street, Philadelphia.

Dr. Louis Jack, 1102 Arch street,

Dr. C. A. Kingsbury, 1119 Walnut street, "

Dr. Isaiah Lukens, 827 Arch street,

W. A. DUFF, 516 Arch street, "

JOHN R. RUBENCAME, 825 Arch street, "

SAMUEL S. WHITE, Chairman, 528 Arch street, Phila. Philadelphia, Dec. 11th, 1866.

#### PROCEEDINGS OF DENTAL ASSOCIATIONS.

At a special meeting of the Northern Ohio Dental Association, held at Cleveland, October 11, 1866, it was

Resolved, That the Northern Ohio Dental Association ignore the claims of the "Goodyear Dental Vulcanite Company," as set forth in their circular recently issued to the profession. Believing it to be an extortion, we will render to any and all dental societies and associations our cordial co-operation in any endeavor they may undertake to defend themselves, or any member thereof, against the enforcement of this extortionate demand.

Resolved, That the Secretary be requested to send copies of the above resolution to other societies and associations.

B. F. ROBINSON, President N. O. D A.

### W. P. Horton, Secretary.

At a meeting of the Ohio State Dental Association, held at Columbus, November 1st, it was resolved that the dentists of Ohio refuse to accede to the demands of the Goodyear Dental Vulcanite Company of Boston.

At a meeting of the CENTRAL OHIO DENTAL ASSOCIATION, held at Zanesville, November 13th, it was resolved to endorse the doings of the State Association, and each dentist present at each association gave one hundred dollars, and some gave one hundred and ten dollars, to assist those who might be prosecuted.

It will be seen by the following extract from the Associated Press despatches, that the question has been brought before the Supreme Court, at Washington:—

#### THE UNITED STATES SUPREME COURT.

Chief Justice Chase gave his decision to-day in the cases of Josiah

Bacon against Thomas G. Hills, and Henry Goodyear against O. A. Daily In these cases the complainants—the former being the owner of the Cummings patent, and the latter of the Goodyear patent—ask for an injunction restraining the defendants from using vulcanized rubber for making artificial gums and plates for teeth. He denied the injunction in the first case, and granted a temporary injunction in the second case, subject to removal at any time when the parties shall give reasonable security for the payment to the complainant for such use as they may make of it.

J. T.

The dental profession of North Carolina are making a praiseworthy effort to elevate the standard of dentistry in that State, and have introduced a bill for adoption by the Legislature, which requires every one who commences dental practice in that State, after the first of January, 1867, to be a graduate of a recognized dental college. Those who are now in practice, not graduates, are, by the provisions of the bill, required to submit to an examination by a regularly appointed examining board of the State Dental Society. We wish the pioneers in this advanced movement hearty success. The next meeting of the North Carolina Dental Association will be held at High Point, the third Wednesday, Thursday and Friday of June next. The officers of the present year are as follows

President-B. F. Arrington.

Vice-Presidents-R. P. Bessent, J. W. Hunter.

Recording Secretary-R. D. Fleming.

Corresponding Secretary-V. E. Turner.

Treasurer-M. R. Banner.

Executive Committee-J. W. Howlet, J. H. Wayt and J. O. Moore.

The well-known character and reputation of the gentlemen connected with this movement, will doubtless insure its successful accomplishment.

G. T. B.

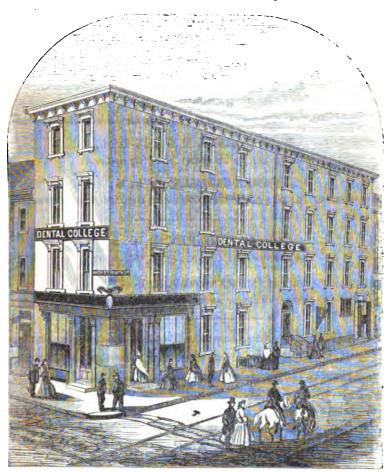
WE are under many obligations to Mr. Wm. M. Hunt, of Waterloo, Seneca County, N. Y., for several valuable skulls of the orders Rodenis and Carnivora. We hope the example of this gentleman will be followed by others, as it is very desirable to have a collection of the teeth of all the inferior orders, accessible to students. We would, therefore, be exceedingly gratified for specimens of animals from any quarter. J. T.

WE have received from S. S. White a package of Roach's nerve extractors, which, in many respects, we consider superior to those in use. With some improvements suggested to the manufacturer, we think they will be unequaled for the purpose intended.

J. T.

# PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE ELVENTH ANNUAL SESSION, 1866-'67.



## TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., ELLESLIE WALLACE, M. D., THOMAS WOOD, BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S.,

S. DILLINGHAM, D. D. S., G. R. MOREHOUSE, M. D., CHARLES HAMILTON, SEC'Y.

### FACULTY.

J. D. WHITE, D. D. S., EMERITUS PROFESSOR.

T. L. BUCKINGHAM, D. D. S.,

PROFESSOR OF CHEMISTRY AND METALLURGY.

E. WILDMAN, M. D., D. D. S.,

PROFESSOR OF MECHANICAL DENTISTRY.

G. T. BARKER, D. D. S.,

PROFESSOR OF PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

W. S. FORBES, M. D., D. D. S., PROFESSOR OF ANATOMY AND PHYSIOLOGY.

JAMES TRUMAN, D. D. S.,
PROFESSOR OF DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIVE DENTISTRY.

J. M. BARSTOW, D. D. S.,
DEMONSTRATOR OF MECHANICAL DENTISTRY.

# The Lectures to the Regular Course commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the 1st of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course, (Demonstrators' Ticket included,) - \$100

Matriculation, (paid but once,) - - - 5

Diploma Fee, - - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphis. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

#### PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eleventh Annual Session, 1866-'67.

The eleventh annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and ease. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department, every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness.

various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

### COURSE OF LECTURES.

#### CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the con-

sideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can

be performed before the class.

#### DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration. At the Clinic the incumbent of this chair will also demonstrate before the class the various operations described in his course of lectures.

#### MECHANICAL DENTISTRY.

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied

the appellation of the Plastic department.

I. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation,

compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

#### PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

#### ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. The valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance

demands, will be given.

The great facilities for the study of practical anatomy, to be found in the city of Philadelphia, obviate the necessity of providing a dissecting-room in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

#### QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College. Also satisfactory evidence of having been in practice five years, inclusive of the term of pupilage, will be considered equivalent to the first course of lectures. The candidate for graduation must prepare a thesis upon some subject connected with the theory or protice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

Candidates for graduation who have not attended lectures.—Dentists who have been in continued practice since 1852 are eligible to be candidates for graduation without attendance on lectures. The candidate for graduation must present satisfactory evidence of his having been in practice for the allotted time, also of his good standing in the profession he must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must undergo a satisfactory examination by the Faculty, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. Of this class of graduates, the matriculation and diploma fees only are required.

#### TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

#### FOR SALE.

THE SUBSCRIBER FOR OFFERS SALE HIS

# PORCELAIN TEETH

## MANUFACURING ESTABLISHMENT.

INCLUDING A

Large Stock of Moulds of very Desirable Patterns,

Body and Enamel Spar of an extra quality,

Carefully selected and broken up,

A Tin Machine, French Burr Mill, Receipts,

And, in short, everything necessary for a SUCCESSFUL PROSECUTION OF THE BUSINESS. Any party wishing to engage in the business will find this an opportunity seldom to be met with.

For further particulars, enquire on the premises, or address the sub-

scriber, by letter.

GEORGE HANNAH,

435 Main Street, Poughkeepsie, N. Y.

January 1, 1867.

# DENTAL TIMES.

Vol. 1V.

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# ON THE ARTIOULATION AND ARRANGEMENT OF ARTIFICIAL TEETH.

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A Paper read before the Pennsylvania Association of Dental Surgeons.

In order that we may have an accurate idea of what is required to produce a natural articulation or antagonism of artificial teeth, it perhaps, will not be out of place to call your attention briefly to the various motions of the lower jaw, and the muscles which produce them. For, unless we perfectly understand the natural action of these useful organs, our attempts to replace them will be attended, at best, with but uncertain success. I do not, for an instant, presume to teach you anything new on this subject; but only refer to it as a foundation on which to build my remarks, or, perhaps, more correctly to establish landmarks by which to guide thought and locate ideas.

The lower jaw of man is possessed of three positive motions,—the upward and downward, extension and retraction, and lateral motion; and these are united together, to give the various movements of mastication. All of these movements are very much exaggerated when the patient has been some time without teeth, as no doubt many of you have found to your sorrow. This is caused first, by the loss of some fixed point of rest for the lower jaw; and secondly, to the loss of tonicity in the integuments, which takes place at the age the natural organs are mostly lost.

The lower jaw is drawn upward by the contraction of the temporal, aided by the masseter muscle; these are counteracted by a number of small muscles, situated at the anterior aspect of the neck. The sliding, and also the lateral motion, is produced mainly by the two pterygoids of either side, which are so constituted as to act in concert or alone. Mastication is performed principally by the rotation or the triturating motion, the opening and closing of the jaws being accessory or preparatory to the final and most important act of preparing the food for reception into the stomach; and therefore the bicuspids, and especially the molars, become, in this operation, the most useful occupants of the dental arch; and in

replacing them, we should always endeavor to give them all the liberty and stability possible. In this connection, allow me to call attention to the tongue, as an important organ of mastication; for it is mainly to the efforts of this useful member that the food is kept between these efficient mill-stones with which nature has provided us. How important it is then, to give it plenty of room in which to work without irritation or constraint; and how often is this point neglected.

Artificial teeth are required for two purposes, beauty and comfort, or use and ornament; and he who would successfully apply them, must constantly bear in mind these two important considerations, ever remembering that although utility is the great object sought, yet appearances must not be too much ignored. The mind is often more sensitive than the body; the patient must be pleased before we have attained perfect success.

The proper mastication of the food (next to getting it,) is the most important action on which the health and well-being of man depends; for if this be neglected, digestion is impeded, nutrition impaired, health, happiness, and even life itself, is soon destroyed. It should, therefore, be our object to so adapt our work as to enable the patient, with ease and comfort, to use them freely in mastication. Next to a good fit, nothing contributes more to this than a perfect articulation. On this subject I desire to offer a few suggestions.

First. In taking the articulation, our great object should be to "catch nature." Nearly every operator has his own favorite mode of doing this, and it is of very little importance how it is done, if the desired end is attained.

My own plan of working is: after trying in the plates, (I now speak of entire sets,) and finding them all right, to place a strip of wax on each plate, to represent, as nearly as may be, the intended teeth. After securing them to the plates, I try them in, and cut off or add to until they are right in length and fullness. The advantage of this plan is, the wax representing the teeth allows you to observe the effect the teeth will produce, and enables you to make accurate adjustment and detect more readily any false position of the lower jaw; and the ease with which the wax can be altered permits you to experiment upon the expression different lengths or fullness will give, and select that which is most desirable and natural. I make it a rule to try them in a number of times, and am not satisfied until the patient has closed several times the same,—often a severe tax alike upon the patient and patience. Every expedient should be used to keep the patient in a good humor, and make them forget what you are doing. Their assistance is more in the way than of advantage in this operation; the less they help you the better.

In arranging in the wax, we should endeavor to approximate the rela-

tive lengths of the upper and lower teeth. As a general rule, make the upper ones long enough to just show the tips of the incisors when the lips are slightly parted, and then make the lower ones to them. This mostly requires about an equal division of the space. It is best, if any error is made, to make the bite too short, and rather have the upper teeth not seen at all, than to show too much. The upper back teeth should be shorter as they run back, so as to give a little extra length to the lower ones; they look better, more natural, and it makes the upper a little lighter, and adds weight to the lower. It also brings the division higher up on the masseter muscle, where the integuments are less flabby, and has a tendency to prevent the patient biting the cheek,—all small matters, but deserving of attention for all that.

Where patients are wearing teeth, it is sometimes best not to change the articulation, although it may be defective, especially if they are advanced in years. Dear bought experience has taught me some valuable lessons on this point; it is always best to let good enough alone. After getting the wax to suit, carefully mark the centre, and after securing the waxes in their position, proceed to make the "bite" or articulating model. For whole sets, nothing is better than a neatly made old-fashioned double bite, with a decent tail, well keyed. It should be solid, and convenient to handle,—neither too large or too small. These new-fangled contrivances, which so nicely represent all the motions of the lower jaw, natural and otherwise, are very well to play with; in fact, they are too playful, and often play with the operator very badly. A good solid bite is indispensible to success.

In arranging the teeth, endeavor to form the curve with the six front teeth, and then carry the bicuspids and molars back in straight diverging lines, so as to allow the unruly member full and free swing without let or hindrance. It is always preferable to place them over the ridge; but do not hesitate to put them outside, if it is required, for tongue room, especially in the upper jaw. Endeavor to place the lower ones as near on the ridge as you can conveniently, leaning in as little as possible, making the upper ones set out to meet them. There are few cases that will allow the lower back teeth to lean in much without interfering with the free movements of the tongue. The lower front teeth may, with advantage, be allowed to lean in slightly; it makes them set more solidly. articulation endeavor to make straight, so that if either case is placed on a level surface, every tooth will touch. The pretty points on the masticating surface of the bicuspids and molars, which are designed to interlock so nicely, should be removed; -the object of this is to allow the pterygoids to give that triturating or grinding motion to the jaw, so necessary to perfect mastication. To favor this, I prefer a small lap, and allow a slight space between the outside of the cutting edge of the lower incisors and the inside of the upper, for two reasons: first, to allow a little sliding of the jaw, and, secondly, to allow the main pressure to fall upon the back teeth, as they are better able to bear it, and it is less liable to displace the denture. It is also of advantage to round the posterior edge of the last molar both upper and lower: it feels more pleasant to the tongue, and if it is not done, they are apt to strike first, and throw the upper ones down in front.

When trying the teeth in on wax, the small points may be allowed to slide, because either in vulcanizing or soldering, little changes are apt to take place, which will destroy an accurate adjustment. It is therefore preferable to wait until the case is entirely finished to do the "touching up." When putting them in finished, especial attention should be paid to round off all points which are likely to strike in the various movements of the jaw; for, although after the loss of the natural teeth, flexion and extension is mainly to be relied upon in mastication, by a little extra care and attention, in most cases the other motions may be enjoyed to a great extent, and the practical usefulness of the operation increased. When the crowns of the teeth are made smooth, they may be roughened by cross grooves cut in them with the edge of a sharp corundum stone.

I admit that where the masticating surfaces of teeth are not marred, and made to nicely fit into each other, it looks well, and displays the workman's skill; but, in practical use, if they do not come together in the same spot, or, if after closure, any attempt is made at mastication, the suction is broken, and the denture displaced; and also contend that the "rat-trap" motion is not sufficient for perfect mastication. It is not skill alone that makes a good operator, but the adaptation of it. Especially is this true in our own specialty, where every operation requires an educated judgment, quick perception, and an accurate knowledge of the parts upon which we work, the difficulties to be encountered, and the end sought; the right use of these will supply the means to accomplish it. So far as my observation has gone, the most common defect in the arrangement of teeth is the almost universal practice of turning in the last molar, giving the case a horse-shoe appearance. This is objectionable: first, because it interferes with the tongue, if not to the extent to produce irritation, it makes a prominent angle for it to catch upon, and impedes its action; and, secondly, it allows the cheek to fall in just where it ought not, and by not pressing the muscles out of the way, allows the cheek to be bitten each time the teeth are closed. Several cases of this kind have lately come under my notice. To say the least, it is not artistic, does not improve the looks of the case out of the mouth or in, and is a condition seldom found in nature, and only there as an irregularity.

Another evil akin to it, is contraction of the arch, which destroys in a great measure the beauty and usefulness of the case. The teeth should be allowed to form a full, free circle. There is but little danger of allowing too much room for the tongue, especially if the patient be feminine. It also gives a better expression to the face, and restores that youthful contour so highly prized. It must be remembered that the food is held between the grinders by the tongue and cheek: if we place the teeth too much in, not only is the action of the tongue impaired, but the assistance of the cheek is also, in the same measure, lost, and a large pocket is formed, into which the food collects to the patient's annoyance. We should endeavor to approximate as near as possible the position of the natural organs: and when we reflect upon the immense change in the size of either jaw by the absorption of the alveolar processes, it will readily be seen that even to approximate the position teeth occupy naturally, will require the artificial substitute to be placed as far outside the ridge as stability will allow. I have been thus explicit upon the subject of tongue room, because it is found to be so generally neglected. Although I have seen a large number of cases which did not answer, or only answered imperfectly because of this defect, I do not recollect a single instance of trouble from the other extreme. Yet, in this, as in everything else, it is possible to have too much of a good thing. The operator must depend upon his judgment to guide him on the middle and only safe track.

In upper cases, the bite is taken in much the same way as for entire sets, placing wax upon the plate, and trimming it down until it approximates the size of the intended teeth.

These often require much more bona fide skill and good judgment than whole sets; and often, from irregularity of the lower teeth, are the cause of considerable labor and annoyance.

[TO BE CONTINUED.]

#### AMALGAM,

BY B. WOOD, D. D. S.

It is now about thirty years since amalgam, of some form or another, has been in general use for filling teeth. It has been the object of both the most extravagant commendation and condemnation, being represented on the one hand as innoxious, inoxydable, as forming a more perfect and durable filling than gold, and as being preservative, per se, in the actual arrest of decay; while, on the other hand, denounced as detrimental to health, owing to the contained mercury, (which has been said to produce salivation and other mercurial affections,) as subject to oxydation and shrinkage, and therefore unfit for filling teeth; and even as inducing, per se, softening and decay of teeth filled with it; originating abscess, exos-

tosis, &c. It was found to blacken teeth filled with it, and this lent apparent confirmation to other objections urged.

Up to within the last half dozen years the better class of dentists have been arrayed against it with remarkable unanimity, and for some years it was held unprofessional to employ it at all. Since that time a great change in sentiment prevails. Many who formerly opposed it most strongly, now use it to a greater extent than any other material; and there is rarely a dentist, of high or low position, but employs it in "certain cases," although it must be conceded that if admissable in the cases specified, it may be in others. Few now appear to regard it injurious, per se, either to the general health or to the teeth.

Without discussing the merits of this material, I will say that I have ever been opposed to its general use as a substitute for gold, where the latter could be applied successfully,—and there are few cases in which it cannot be by adequate skill. Indeed, it was due to this strong objection that I did not before introduce to the profession a composition for amalgam superior in several respects to the preparations yet in use. During the past five years I have seen a good many amalgam plugs of from five to twenty years standing; and although the majority were bad, yet there were enough good ones to show that the fault was less in the material than in the unskillful use of it, and to indicate the possibility of so preparing it that, in competent hands, it might prove, in all ordinary cases, as effectual simply for the preservation of teeth as gold.

Until about ten years ago, the best material generally employed as a basis for amalgam, was an alloy of silver and copper,—usually from eight to ten parts of silver to one part of copper, as contained in the ordinary silver coins, which, being convenient at hand, and containing sufficient copper to cause the amalgam to harden, were almost universally resorted to by the best dentists. Sometimes zinc was added, probably to retard the setting, as it has that effect. Other cheaper compounds, consisting of the baser metals, were used to some extent,—being, however, comparatively worthless. Pure silver, alone, although proposed and much talked about by some, never found favor in practice, for the very good reason that the filings when mixed with mercury do not cohere and harden properly, some alloy being essential to fit it for the purpose.

Plugs made with this form of amalgam (silver alloyed with copper as the basis,) are very hard, but shrink some, and are quite granular and gritty in texture. They blacken the teeth very generally, and upon breaking them open, I have sometimes found the plugs themselves black throughout their substances, showing their permeability to air if not to fluids. Still, I have seen cases of teeth preserved twenty years or more with this material. No doubt much depended upon the relative amount

of mercury incorporated in the mixture, or the manner of preparing the paste, as well as the fitting of the cavity and introduction and finishing of the plug.

In 1855 Professor E. Townsond brought to the notice of the profession an alloy of tin and silver, since known as "Townsend's Amalgam," which has proved to be an improvement upon the old form in some particulars, especially in overcoming the shrinkage to a great extent, and forming a denser or more compact plug, and was really a useful boon to the profession, although the doctor finding it not equal to his first expectations, and appearing to sink under a sense of odium for commending it, (at a time when amalgam was under professional ban,) soon repudiated it and all forms of amalgam. Nevertheless, it is doubtful if in the course of his useful life he ever rendered a better service to the profession, or entitled himself to more permanent gratitude; and it is only to be regretted that, instead of renouncing, he had not gone on to perfect the improvement.

This form of amalgam, or some modification of it, has since come into general use. Prepared according to the original formula, it forms a very compact and durable plug, although it sets too quickly for convenience, (unless an excess of mercury be used,) and the paste is too granular and non-coherent to manipulate well. The article sold as "Townsend's Amalgam," however, is not always made after the original formula, but sometimes contains a larger proportion of tin, which makes it cheaper and prevents its setting so quickly, but the plugs are softer and less durable, and also liable to shrink; and if there be too great an excess of tin, the paste will not harden; hence, probably, the ground of complaint sometimes made, that "Townsend's Amalgam will not harden;" but this may also be the operator's fault in using an excess of mercury. Dr. Townsend directed that it should be made up into a stiff cake. He also very properly enjoined that the ingredients should be pure, which it is to be feared is not always regarded in the competition of trade. Dentists who prepare it themselves, frequently use nothing purer than silver coin (which contains about one-tenth of copper,) in connection with any quality of block tin at hand. Sometimes zinc is added, to retard the setting, although a disadvantage in other respects. It were better had the preparation of an article so extensively employed, been under the control of the inventor or some one having a personal stake in the quality of the article, or else that the profession were more generally qualified to prepare it for themselves.

There are also other kinds of material for amalgam, sold under various names, consisting mostly of cadmium, or cadmium and tin, or other metals,

quite dissimilar from the above, and comparatively worthless; but these are discarded by the better class of dentists, and need not be specified.

Some of the secret preparations lately introduced as new articles, claim to contain *platinum* in addition to tin and silver, for what object is not declared; some profess to contain both platinum and gold, although sold at prices which would indicate too small a proportion of the latter for any beneficial effect.

Platinum is of no advantage whatever in the composition, and in some respects is one of the worst admixtures that could be used. does not combine with mercury at ordinary temperatures, and its affinity for the tin and silver is so feeble, that when filings of the compound are worked up with mercury, the platinum is dissolved out, so to speak, and rejected by the latter, remaining only as a mechanical admixture. Hence it is, that when the amalgam hardens, its surface is seen freckled with dark dots, consisting of isolated particles of platinum, affording so many centres for galvanic action. It also presents the appearance of being coated with a dark, dirty fuzz. It is easy to foresee the result of such incoherent particles between a plug and the walls of a dental cavity. Copper, for a like reason, has a similar effect, although much less marked. Hence, admixtures of either of these metals should be guarded against in preparations for amalgam. The so-called "platina amalgams" do not contain platinum. They may contain copper, zinc, cadmium, antimony, &c., (none of which they should contain,) but not platinum. What the quacks of New York city call "white platina," or "platina cement," is nothing but the ordinary amalgam. They leave it to the option of their patients to have "amalgam" at so much, or "white platina" at a higher price, but they use one and the same article. Some of these worthies facetiously relate this difference, that in the one case they wash the paste twice with alcohol; in the other, but once! It is one of the small tricks of quackery, glorying in its shame.

Gold, however, combines well with mercury, and also with the silver and tin in the alloy, and when added in due proportion, uncontaminated with platinum, copper or other impurity, improves the result. A few years prior to Dr. Townsend's announcement, William Robertson, of England, recommended an alloy of one part gold, three parts silver, and two parts tin, using the metals pure. Although a comparative examination in the laboratory, went to show the inferiority of this to that made after Townsend's formula, it served to indicate the probable value of gold as an addition to silver and tin, in case the proportions were properly adjusted. Subsequent experiment favored a larger proportion of silver and tin, the best result being obtained by combining the latter metals in nearly equal proportions, and adding thereto about one-tenth part, by weight, of gold.

It mixes up, with mercury, into a coherent cake, which works neatly, and upon hardening, forms a white, bright, smooth-surfaced, compact plug, superior to either of the other two preparations. If in excess, gold is rather a detriment, and if too little be employed, its good effects are not perceptible. The gold should be pure, free from copper, platinum, &c., for reasons above stated, as should be the other ingredients, and also the mercury.

A modification of Dr. Townsend's form of amalgam, known as "Lawrence's Amalgam," has recently been brought into notice. It possesses the quality of setting more slowly than Townsend's, and, for this reason, is preferred by some dentists, who wish to mix up enough at once for half a day's operations. This is inconvenient, however, in building out teeth, and in the liability to injury by mastication. It is not so hard and durable as Townsend's, and not so bright and white when set, presenting a dull blue or zinc-like appearance. We are not aware that the precise formula has ever been stated.

In fact, nearly all the preparations for amalgam now on sale, are held as secrets from the profession, either as to the constituents or the proportions, which secrecy is perhaps justifiable in the case of real improvements, as a means of protection, in view of the prejudice which prevails in the profession against the legitimate and honorable means of protection afforded by the patent system: since not to allow men some security in the fruits of their labors would discourage improvements.

ALBARY, N. Y.

#### **OUARTERLY NOTES.**

Of all other professional interests, that just now in the ascendent is Dental Education; the Colleges have had their Commencements, when they added more than a hundred to the ranks of dental practitioners. Diplomas are very good helps, but very poor dependencies, and yet we suspect many care more for the shadow than for the substance.

The graduates having won their honors, how stand the professors? Some have filled their chairs with dignity and ease; assiduous workers, they have gleaned from many fields rich sheaves for their garners, to be dealt out in season, with liberal hands. Some are passable, where better cannot be obtained. There remains another class, by whom great things were promised; these are they who would raise the whole profession to their own high standard; who would bring to their aid a knowledge of the highest and noblest of the manual arts, of sculpture, of painting, of architecture; who would make their pupils Artists, filled with the Divine afflatus. But, alas for such promisers, their gems prove to be paste; their paintings, daubs; their sculpture and architecture, mere plaster of

Paris images; and all their inspiration but maudlin sentiment. So they go, and judgment is entered: Weighed in the balances, and found wanting.

The festive gatherings of the past month mark an epoch of professional liberality and fraternity. It does men good to come together and know each other, to smoke the pipe of peace, and drink the waters of oblivion over past disputes. We ate, drank and were merry in the City of Brotherly Love: thence journeyed to New York, to find the old Dental Convention in session, alive and vigorous, with a good platform to stand on, and no rotten timbers. The meeting was a valuable one, and the closing feast a fitting sequel. With energy and good management, this Convention may be made what one of the speakers indicated: The Democratic Council of the Profession. Surely, it is worth trying for.

We were glad that the occasion offered by the Convention was not suffered to pass without a decided protest against the wholesale sacrifice of human teeth perpetrated at the "gas" emporiums in our large cities. have seen commendations of this ruthless butchery in public prints, from prominent medical men, which are disgraceful. No dentist who knows how to save teeth, would risk his reputation by endorsing a practice which aims to take as many teeth from the mouths as dollars from the pockets of the victims. The ignorance of physicians in regard to our specialty is proverbial, and yet they too often give their opinions on matters within our domain with suspicious glibness. Let them stick to their drugs, and leave dentistry to dentists; the latter are quite as well qualified for their profession as the former are for theirs. If extracting is to be a specialty, dentists should support such of their own number as will proceed with judgment and honesty, and not aid in building up a system which must prove subversive of the best interests of their patients and themselves.

Looking over the periodicals that have gathered on our table, we conclude that dentists share the common frailty of liking to see themselves in print. Judge of our surprise, in taking up in succession three recent dental journals, to find the same article appearing as original in each. Only the audacity of a gorilla could be sufficient for such a performance; we hope the author will receive a compensation equal to his merits.

Turning to another source, we come to an utterance, given forth as from the inner oracle, displaying a wig-full of learning, but of so deep a nature as to require very "open vision" to see it. Persons not thus endowed, fail to apprehend the author's treatment, especially when it applies to "the gingival margins of the gums." Will he kindly tell us where they may be found. In view of the fulminations with which this array of profundity is backed up, we quote the following: "It would be much better

for the credit of dentistry and the well-being of the community, did such dental lights confine the exhibition of their skill and superior talents to much simpler operations. Indeed, words cannot be found in the English or any other language [especially the Chinese, of which the Doctor is supposed to be a professor,] suitable to express the just opprobrium that should be meted out to all such living practitioners of dentistry."

Another writer is accorded the leading place in the journal which he illuminates with the corruscations of his genius. An English person, named Tomes, whom our readers may chance to have heard of, is taken down completely by this second Daniel come to judgment; even a certain "Masterly Report on Dental Physiology," does not escape correction. While we will not waste our sympathy on the former, we are at a loss whether to admire or wonder at the temerity with which the latter is attacked. We cannot recommend any one to copy this author's style; it is unique, as the work of genius always is, reminding us of a vertebral column, which has lost its articulations. When next he tries his pen, he should better understand his bearings.

We commend to the Dental Protective Society a brochure, fresh from Paris, which settles the priority of the introduction of vulcanized caoutchouc for dental purposes. With such weighty testimony against them, we are confident the rubber patents would be driven out of Court before the Judges had time to see more than the author's name. What has become of the Commissioners?

We referred on a former occasion to the Code of Dental Ethics, but said nothing of its authorship, that being a matter of even less account than the Code itself. Section 3 of Article II., is as follows:

"It is unprofessional to resort to public advertisements, cards, handbills, posters or signs, calling attention to peculiar styles of work, lowness of prices, special modes of operating; or to claim superiority over neighboring practitioners; to publish reports of cases or certificates in the public prints; to go from house to house to solicit or perform operations; to circulate or recommend nostrums; or to perform any other similar acts."

What shall be thought of the professional conduct of one who, having reported that Code and secured its passage, should print the following advertisements:

AFFE AND PAINLESS TOOTH EXTRACTION.—Having concluded to use our Celebrated

APPABATOS for pr-paring Nitrous Oxyd, in Cincinnati, during Dr.—'s labors in
the Dental College, it became necessary to make some arrangement for our permanent office in
Xenia. So we carefully examined all the kinds of apparatus in Cincinnati. Xenia,—and all in the
market,—but finding none other safe or efficient, regardless of the high price, we sent for another

—— APPARATUS, which arrived eafely in Xenia immediately after the departure of its predecessor. —— Apparatus regulates the heat to exactly the proper degree. Too high a temperature, for fiveminutes, would generate enough of poison to render a hundred galions of Nitrous
Oxyd injurious to the patient. No other apparatus has a heat regulator.

DROFESSIONAL.—Cleanliness is skin to godliness, but it isn't CLEARLY to reinbale your own breath, nor is it GODLY or SAFE to inhale from a rubber bag into which hundreds of others have breathed. DR. ——, gives PURE NITROUS OXYDE, for extracting teeth, from a garometer, into which no one has breathed, or can breathe. He also treats neuralgia and diseases of the face, mouth and throat.

Pass on, Professor, and when you essay to write quack advertisements again, think of the Code of Ethics, and don't disgrace the champion of the Cross Roads Spelling School. By the way, was not the temperature too high when that last gas was made? Doubtless the poisonous fumes brought on your mal de tete. No wonder he raves about dogs, poor fellow! Why should not one "whose boyhood was sung to sleep by the braying of hounds and the brown wolf's howl, and wakened by the shricks of the screech-owl and the noisy courtships of the wild turkey gobbler," imitate, in his mania, the cries which haunted his early years? We wish our friend a speedy return to his right mind.

Certain ones among us are always harping on the evils of our nomenclature, who, at the same time, are most conspicuous for their random use of obsolete words. But, if the known and recognized terms be cumbrous and inexpressive, why should we saddle ourselves with a fresh load, which have neither the prestige of long usage nor any merit to commend them! "A little learning is a dangerous thing."

In conclusion, it may be well to utter a warning against the conceit which would arrogate to itself all the ingenuity and scientific advancement attained by the many laborers gone before, or still cotemporary in our specialty. A man who moves in an atmosphere of effrontery, breathing out threatenings and anathemas, who habitually decrys others whom the community holds worthy of respect, will find himself some day in woful want of friends. Whom effrontery raises into high places, it also makes so reckless as to insure his fall. Wisdom carries an air of courtesy with its confidence. The loud assertion, the impudent retort, the sneering fling, the use of pondrous polysyllables and obsolete conglomerations of seggregate and aggregate concatenations, betray the uncultured mind. The test of style is clearness, not turgidity; science expresses her formulas in well marked definitions, not in vague and crude absurdities. If, then, any man among us would be a teacher, let him first learn so to express himself that the brain of a seraph need not be muddled by his aphorisms.

UNKNOWN.

#### REGULATING TEETH.

BY C. A. MARVIN, D. D. S.

(CONTINUED.)

In my former article on this subject, it was stated that four main considerations were to be kept constantly in mind while operating upon irregular teeth, viz.:

1st. The preservation of correct facial expression;

2d. Its restoration if lost;

3d. Perfect articulation; and

4th. Orderly arrangement.

In this article I propose to consider one of these leading principles somewhat more particularly.

Many seem to think that the first of these four principles requires little examination, and are quite inclined to pronounce its nomination entirely gratuitous.

"Of course the correct expression of the face must be preserved," say they. "Every dentist knows that; and it is altogether unnecessary to spend time in arguing the point."

Now, I have no doubt that the admission of the general principle contained in this rule will be instantly conceded by every dentist; and the fact that all agree in admitting its truth, renders the examination of it more important, because a rule that is accepted by all should be well understood. Nor can it be said with any degree of propriety that there is nothing in this rule deep or obscure enough to require study. There is much in it; much that does not appear upon a first glance; much that will appear, however, if operations upon irregular teeth are attempted without studying the subject.

Correct facial expression. What is it? It is not the mere absence of deformity. It is not merely that condition of the features which enables the individual to use them at will in expressing joy, sorrow, disgust, pity, conceit, anxiety or composure of mind. It is not merely that the nose is straight, and that the angle formed by its base and the right cheek is exactly equal to that formed by its base and the left cheek; that the corners of the mouth are level, and that the lips meet evenly. It is not that words can issue from the parted lips smoothly and unaccompanied by contortions or evidence of effort; that smiles of sweetness can play around the mouth, and an expression of unfeigned pleasure appear on the face, without a distressing exhibition of struggle between feature and feeling. It is more. Physiognomists tell us that the prominent traits of human character are marked upon the face. But, in my judgment, the subject which we are examining makes sad havoc with many of their theories. An absolutely correct expression of the face would undoubtedly be a physiognomical expression; but, taking expressions as we find them, physiognomy is sadly at fault. Let ten persons present themselves for examination according to physiognomy, strictly, and while undergoing examination let them close their eyes and lips, and seven out of the ten characters would fail of being correctly delineated. Why? The soul-the seat of character-is shut in from view. Its windows-the eyes-are closed; the exponents of its varied sentiments and feelings—the lips—are fixed; consequently the inner being cannot be seen, and judgment can only be

formed from the features. Some general idea can be gained from these; but in the absence of the eye-glance and the mouth-motion, no reliable or minute opinion can be reached. It is only when the thought within is betrayed by the eye or manifested by the involuntary workings of the features, that the revelations of the science of physiognomy, so aided, can be relied upon.

Now, it may be asked, what all this has to do with regulating teeth! And perhaps a smile of approval may cross the lips of the reader as he sees the question. Do not let us forget, my practical friend, that as members of a profession, which claims to be a *learned* profession, we not only have the right, but should esteem it a duty to investigate closely and to remote details. It is easy to arrest the seeker after knowledge when pursuing a line of thought to remote depths, with a blunt, practical question, and sometimes it is necessary; but it should not be thrown in until the irrelevancy of the examination is apparent, else it not only chills the eager investigator, but betrays an absence of perception on the part of the objector, not specially flattering.

It is not intended that all dentists should immerse themselves in the study of physiognomy as a science, that these remarks are made, but to show that the study of the expression of the face is an important subject; that it has been so deemed, and that it is so deemed in the present day; and it will not do for the practitioner of dentistry, who claims to be an intelligent and competent man, to ignore it, or say there is little in it. Physiognomy, as I have intimated, cannot, in my judgment, substantiate all that it claims. Its far-fetched inferences and fine spun theories are too multiform and minute; but there is something in it, even as a science. There is more good, however, in its effect than in itself. Its effect is close scrutiny of the human countenance; and if we are at all interested in it as a science, we find ourselves endeavoring to trace on the human face evidences of what we know to be prominent traits in the character.

Now, this is just where I wish to bring my readers, in this article, viz.: to become students of the human face. Not for the purpose of establishing any theory, of propping up any "ology" whatever, but that they all may be able to determine for themselves what correct facial expression is. This is of prime importance to the dentist. I cannot find language too expressive to set forth my estimate of its value; nay, of its indispensable necessity.

How can a dentist insert an artificial denture that shall be an evidence of professional skill, unless he is able to determine what expression of the mouth he is to secure? In the absence of this knowledge, what is he but an artizan, and his set of teeth the product of mechanical skill alone.

If such knowledge is necessary for the proper insertion of artificial

teeth, how doubly important in the regulating of the natural ones. A failure in the first case may be corrected by some other competent dentist, and the only damage to the patient be the loss of the time and price of the teeth; but injudicious or ignorant management of the natural organs may produce results which no skillful hand can correct, and which may cause life-long disfigurement.

Am I not right, therefore, in asserting that close study of faces, so as to decide at once upon correct expression, is all important?

When a case of irregular teeth presents itself for treatment, the dentist should first of all scrutinize the face. He should examine it in repose and in motion. He should engage in conversation with the patient for the express purpose of studying the face and observing what outward evidence, if any, there may be of the irregularity within. By so doing, he will work intelligently, having decided what he is to accomplish before he commences the operation. A little time spent in studying the case before beginning to operate, will often save much time and annoyance afterward.

Some general directions may be given for the formation of an opinion as to correct expression. But such directions can only be very general. The details can be gained by study alone.

First, then, observe the outlines of the face; notice the prominence of the forehead and of the chin, and the fullness of the cheeks. By observing these, the instructed eye is at once enabled to perceive what degree of fullness the lips should possess. If these are well proportioned; if the upper lip, at the base of the nose, is neither too much depressed nor too much elevated to hold its proper relation to the border of the same lip, and if the border of the lower lip meets easily, and without constraint, the border of the upper, and itself bears the proper relation to the depression and point of the chin, the one feature may be safely considered normal and consistent outwardly.

Next, observe the relations between this feature—the mouth—and the other features; is it so related to them as to attract no special attention to itself; is the harmony of the features unbroken, and when a front view, a quarter view, or a side view is taken, do all appear well-balanced? If so, let them remain thus; and, in all the operations upon the teeth, let great care be taken not to disturb the outward expression.

Many a person has been so changed in the expression of face by dental operations, as to be hardly recognizable by their friends. Their identity has been lost. Such is not dental art. Improvement, or no change, should be the rule; and the dentist should fit himself to work by this rule.

This, and just this, is what I wish to accomplish by writing upon this topic,—increased attention to the study of the human face. If anything

I have herein written shall have the effect to increase in any other mind interest in this particular theme, I shall not feel that this is labor in vain.

(To BE CONTINUED.)

### TAKING PLASTER IMPRESSIONS WITHOUT AN IMPRESSION CUP.

BY J. F. LEAMING, M. D., D. D. S.

In this brief article I design to make a few remarks in reference to the method of taking upper impressions with plaster without the use of the usual cup of metal or wax.

The process is simple. It requires less time than the usual method, gives perfect results, and is, in a large majority of cases, preferred by the patient; avoiding the unpleasant, and sometimes painful distention of the mouth, unavoidable when introducing the cup. A clean bowl, for mixing the plaster, and a spatula of polished steel, or, better, of silver, threequarters of an inch wide, and slightly flexible, are the only fixtures necessary. The perfectly polished surface of the spatula is essential, as, otherwise, annoyance will be experienced from the adhesion of the plaster to the instrument, best remedied, when it occurs, by dipping the spatula into water. Let the patient be seated in the ordinary operating-chair, the head slightly inclined backwards. If the patient is liable to nausea or retching, it will be greatly mitigated by keeping the head nearly erect, and breathing through the nose. After carefully examining the mouth, mix a sufficient quantity of plaster (of any good variety, if fine and strong,) to the consistence requisite to pour into a mould, adding a little salt, if necessary, and stiring constantly, until it gives evidence of settling. When it will not readily fall from the spatula inverted, it is fit for use. Care should be taken not to delay too long, as better results are obtained while the plaster is quite thin. Distending the mouth slightly with the left hand, introduce the plaster quickly, but not hurriedly, upon the point of the spatula, first covering the arch, until over-full, then upon the buccal aspect of the gum, beginning posteriorly on both sides, and finishing anteriorly, pressing the plaster carefully to the gum, in front, with the napkin. Remove, by first pressing the impression at the sides, carefully If any portion of the rim is imperfect, trim down as far as needful, wet the impression, re-apply it to the mouth, and build up with fresh plaster.

For partial sets, I regard the above method as altogether superior. To remove in such cases, it is sometimes best to break off the rim by inserting the point of the spatula in a line with the cutting edges of the teeth.

Success with the above method, will depend much upon the familiarity of the operator with the particular article of plaster he uses, especially with the time required to set. A little salt or warm water, or both, if necessary, will quicken it; cold water retards it. Too much water will cause it to set spongily, and be very liable to crumble. Too little water will cause it to set too rapidly. Ordinarily, a little salt, with water, at common temperature, 60° to 80°, will be found best. Beginners would do well to dispense with the salt at first.

The dexterity acquired only by practice, is another essential to complete success; and the operator who is not deterred by a few failures at first, will soon abandon the impression cup for upper cases.

I have used it for years, excepting in cases of spongy gums where moderate pressure is desirable. Beginning in cases of one or two teeth, I found it equally applicable to full sets.

SEAVILLE, N. J.

# COMMENCEMENT OF THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The eleventh Annual Commencement of the Pennsylvania College of Dental Surgery was held on the evening of March 1st, 1867, at Musical Fund Hall. A large and brilliant audience assembled, notwithstanding the weather was not as propitious as desirable. It is always gratifying to have an appreciative auditory, but especially is this so when the end of preliminary studies have been reached, and the commencement of a life experience has begun with so many young men. These annual gatherings are also valuable, in that they in a great measure educate the public mind to an appreciation of the importance of a thorough training in our specialty; and to the extent this knowledge is promulgated will quackery find its true level in their appreciation.

The exercises of the evening consisted of music by the Germania orchestra, prayer by Rev. Dr. Bomberger, conferring the degrees, which duty was performed, in the absence of Henry C. Carey, Esq., President of the Board of Trustees, by Dr. W. W. Fouché. The completion of this interesting ceremony was followed by the distribution of the many beautiful floral gifts from the lady friends of the graduates. This, though not a part of the regular programme, has become a time-honored custom at both Medical and Dental Commencements, and they add much to the interest of these annual gatherings. The valedictory was then delivered to the graduating class by Professor T. L. Buckingham, who earnestly endeavored to impress them with the importance of the duties they had assumed, and that the education they had thus far received, was but the basis upon which to build their reputation, by a rigid self-training in the future.

The following compose the matriculants and graduates of the session just closed.

#### MATRICULANTS.

J. Aspinwall,	Massachusetts.	H. W. Moore,	Pennsylvania.
John A. Andre		D. K. Martin	
Benjamin Arango,	Cuba.	A. M Myers,	New York.
Stephen Armas,		W. B. Millard,	
William Barrett,	•	T. J. Mitchell	
Wm. M. Beardslee,		C. A. Marvin,	New York.
Edward Bedloe,	· ·	T. H. Musgrove,	
E. M. Beesley,		A. L. Northrop,	New York.
H. D Bennett,		Gonzales Orue,	
6 Beysselance,		G. C. Pierpout,	
J. E. Brecht,		John Pearce	
Yldefor o Bravo,		D. B. Phelps,	
George C. Brown,	New Jersey	C. del Portillo,	
T. G. Boggs,	Pennsylvania.	W. C. Parks,	New York.
J. C. Du Bois,		G H. Perine,	
Chas Buckley. Jr.,	Pennsylvania.	G L Rauch,	Pennsylvania.
Thomas Burgh,	New York.	G. L. Robb,	
J. N. Crouse,	Illinois.	A. B Robbins,	Pennsylvania.
C. C. Darby,	Missouri.	W. B Race,	New York.
F. Darby,	New York.	R. G. Roy,	66
8. C. Dayan,		C. O. Rush,	Georgia.
J. Q. McDavid,	South Carolina.	Peter Schembs	Pennayivania.
D. S. Dickerman,	Massachusetts.	John S. Smith,	4
C. O. Dean,		O. W. Strang,	New York.
J. P. Eldridge,	44	K. J Shirk,	Pennsylvania.
L. F. Frink,	Florida	D. D. Smith,	Massachusetts.
C. E Francis,	New York.	J. A. Salmon,	
Richard Gordone,	Cuba.	J. A. Sheldon,	New York.
Tomas Gonzalez,	44	M O Smith,	
Rafael Gonzalez,	**	Sam. Strohm	Pennsylvania.
D. R. Greenlee,		J. B. Thompson,	
J W. Guiley,		G. H. Taylor,	
J. O. Griffith,		G. R. Thomas,	
Robert Huey,	•	Henry Tucker,	
John A. Hawkins,		James Taylor,	
C. Hathaway,		J. D. Thomas,	
Chester Heath,	-	Francisco Vega,	
W. W. Hoffman,		J. E. Valentine,	
H. B. Hamaker,		J. H. Winslow,	
W. B. Hurd,		J. M. Whitney,	
8. Hassell,		J. D. White, Jr.,	
C. B. Harper,		J. G. Weltsmer,	
I-aac H. Levy,		B. Wood,	
E. G. Leach,		C J. Watkins,	
George B Lewis,		H. M. White, M. D.,	
James Lewis,		Amos Wirt,	
E. Martinez,		J. F Leaming, M. D.,	
Marian Martorell,		J. H. Githens,	
•		Spencer Roberts,	
Charles A. Mondelet,	Canada.	W. W. Russell,	Massachusetts
GRADU	ATES.	TITLE OF	THESIS.
Stephen Armos,	Cuba,	Dental Caries and its Tr	eatment.
John Aspinwall, Jr ,			
Kdward M Reesley			

Edward M Beesley,.....New Jersey,.....Mounting Teeth on Rubber.

Charles Bulkley,	Pennsylvania,	Mechanical Dentistry.	
		Filling Teeth after the Pulp	is Exposed.
Charles H. Darby,	Missouri,	Hysteria.	
Frank Darby,	New York,	Odontalgia.	
Squire C. Dayan,		Diseases of the Dental Pulp	and Periosteum.
James W. Gurley,	Oregon,	Treatment of Exposed Pulp	<b>6</b> .
Robert Huey,	Pennsylvania,	Inflammation.	
		The Extraction of Teeth as	they pertain to
David R. Martin	Penn-ylvania,	Caries of the Teeth.	[Irregularities.
Mariano Martorell,	Porto Rico,	Caries of the Teeth.	•
John Q. McDavid,	South Carolina,	Extraction of Te-th.	
Henry W Moore,	Penusylvania,		
Gonzales Orue	Cuba,	Mechanical Dentistry.	
Casimiro Portillo		Intlammation.	
George L Rauch,	Pennsylvania,	Caries of the Feeth.	
John 8 Smith,	16	Treatment and Filling of Pu	lp Cavities.
James A. Sheldon,	New York,	Mechanical Dentistry.	
Ciinton W. Strang,	"	Suiphusic Ether and Of lore	form.
James Tayler,	England,	Sympathetic Affections of th	e Teeth.
		Preservation of the Teeth.	
Francisco Vega,	Porto Rica,	Rubber vs. Metal.	
<del>-</del>	•	On the Growth of the Alveo	li.
Joseph F. Winslow	New York	Antrum Highmoriamum.	
			50
GRADUATES	WHO HAVE BEE	n practicing since 18	oz.
G. C. Brown,	New Jersey.	W. B. Hurd,	New York.
J. F. Leaming, M. D	. "	T. Burgh,	. "
D. B. Greenlee, M. D	.Pennsylvania.	S. Hassell,	44
I H Githana		A T Worthson	44

G. C. Drows, New Jersey.	w. b. nurd,	
J. F. Leaming, M. D	T. Burgh,	
D. B. Greenlee, M. DPennsylvania.	8. Hassell,	
J. H. Githens,	A. L. Northrop,	
Spencer Roberts,	Bnos G. Ray,	
Amos Wirt,	T. H. Musgrove,Maryland.	
A. B. Robbins,	W. W. Russell,	
Benjamin Wood,New York.	J. A. Salmon, ""	
C. A. Marvin,	E. G. Leach, ""	
W. C Parks,	D. S Dickerman,	
G. H. Perine,	Chester Heath, New Hampshire	
C. B Francis,		

By a resolution of the Faculty of the College, all who have been in the reputable practice of dentistry since 1852, have the privilege of matriculating and submitting to an examination, without attending lectures. But in order to receive the Diploma of this Institution, they must not only be satisfactory to the Faculty, but they must produce evidence of practical ability in operative and mechanical dentistry. The object of this rule is to endeavor to separate all truly worthy members of the profession from the unworthy, with the belief that it will materially hasten the time when, by the moral force of the community, if not by legal enactment, all will be obliged to possess a certificate of ability to practice. In accordance with this rule, our readers will observe a large number of names under the appropriate heading, of those who voluntarily came forward to comply with the requisitions of this rule. To many, the Diploma may be of trifling value in a pecuniary sense; but their effort to obtain it will, as an example to younger men, be of immense value, and will do much, in our judgment, to elevate the profession. The action of this College in granting these degrees, may be open to criticism in some respects, yet we still regard it as the only means to bring the profession to a common level. All proper means has been, and will continue to be adopted, to guard with jealous care the rights of students and the honor of the profession.

The class of this year exceeds in number that of any previous one; and, judging by the largely increased numbers in all the Dental Colleges of this country, we have a right to feel encouraged in the belief that the vital necessity of a thorough dental education, as a preliminary to practice, is coming to be fully appreciated. Another evidence of this fact is found in the large number of young men just entering upon the studies of their chosen profession in the present class. It is an earnest of the time, close at hand, when to commence practice without a diploma, will be as disreputable as to practice medicine without the thorough training of a medical school. We therefore consider this the most encouraging indication developed in this course.

We would call especial attention to the reports of our demonstrators. We believe they will evidence to all that full opportunities exist for practically developing the theories taught. We think this exhibit of work performed, will bear comparison with any institution of this or any other country, and give evidence of the perseverence and industry of the class of this year. We have repeatedly, in these annual reports, called attention to these clinics. Those members of the profession who have never been in the infirmary of a dental college, can form but a limited idea of their operation from the reports, and time could not be more profitably spent than in visiting one. Any doubts that may be honestly entertained of their usefulness as a means of instruction, must be obliterated by a personal inspection. The advantages possessed by the clinic of this College, and doubtless all others, are far superior to any private practice, let it be ever so extended. Operations that rarely or never come under the care of the practitioner, find their way here for treatment. Under the instruction of thoroughly competent demonstrators, not only these, but the regular routine operations, must be made entirely plain to the dullest comprehension. This College devotes a fine, large, well-lighted room to this purpose, in which are twenty-eight operating-chairs, and two devoted in a separate apartment, for extracting. Two hours daily, excepting Saturday, are devoted to the operative department, under the care of the demonstrator. This time is fixed from two to four, P. M., but in order to give as much time as possible to practical manipulation, all students, not otherwise engaged, are at liberty to use the chairs during hours not devoted to lectures. From nine to eleven, A. M., the Demonstrator of Mechanical Dentistry is always present to give all necessary instruction needed in his branch. The effort has been to make this as thorough as

possible, covering all the operations likely to occur in practice, and of all the different materials used at the present time; so that those whose experience has been confined to mounting teeth on rubber, may have a practical knowledge of inserting teeth on metallic plates. By thus combining the theoretical with the practical, we have as a result, the highest evidences of skill in both departments; and we have no hesitation in asserting that the operations in both the Operative and Mechanical Clinics will not suffer by comparison with those whose reputations stand among the highest in our country. And we doubt not this can be asserted of all the colleges. We do not state these facts from any motive of self-laudation, but to impress, if words and facts will do it, upon the minds of those who have students, that no private practice or instruction, however long or well continued, can be compared to a Collegiate Course in thoroughness and efficiency. The following are the Demonstrator's Reports in detail:

#### OPERATIVE DEPARTMENT.

OPERATIV	E DEPARTMENT.			
Number of Patients visiting the Clinic				
Tin Fillings,  Wood's Metal,  Hill's Stopping,  Amalgam,  Treatment and Filling Pu'p Cavities,  Superficial Caries Removed.  Removal of Salivary Calculi,  Treatment of Periositits,  Do Alveolar Abscess,  Do Inflammation of the Gums,  Do Partial Necrosis,  Do Irregularities,  Pivot Teeth Inserted.  Extraction of Teeth and Roots,	1216 1026 1026 12 96 96 329 555 360 354 45 36 45 17 17 2451			
W. W. HOFFMAN, Reporter.	EDWIN T. DARBY, Demonstrator.			
Full Upper and Under Sets, Full Upper Sets, Full Upper Sets, Full Lower Sets, Partial Upper Sets, Partial Upper Sets, Partial Lower Sets, Obturator, Cases of Artificial Vels, Do Hard Rubber Base, Whole Number of Gum Teeth, Do Plain Teeth, Number of Teeth Mounted for Patients,	AI. DEPARTMENT.  with the following Artificial Dentures:  48 48 6 60 91 1 3 371 2289 2225 435 positing Sets.			
	o. of Teeth, 239			
1 Partial Set do do 6 Full Upper Sets on Metal Base, 8 Partial Sets. do 3 Upper Sets on Metal Base, with Rubber, 1 Full Upper Set, Continuous Gum, 1 Obturator, Hard Rubber. 1 Regulating Plate, Metal. Gum Teeth do Plain du do	do			
Number Teeth on Depositing Cases431				
Total Number of Teeth Mounte	J. M. BARSTOW, Demonstrator.			

The benediction, by the officiating elergyman, closed this interesting occasion. More than the usual number of members of the profession from a distance gave encouragement to teachers and students by their presence on the platform; and we hope that the number of these may yearly be increased. The closing exercises of the colleges in this city have this year been more than usually interesting, from this fact and from the social reunions that have taken place. The princely liberality of Dr. S. S. White in his magnificent entertainment to the colleges and the members of the profession generally, will have very much to do in infusing a large liberality, a broader charity and a clearer comprehension of the work yet to be accomplished. While a review of the past and present brings with it many regrets, many lamentable short comings in our mode and means of education, yet we find much to hope for, much that is satisfactory; and it can be truthfully said that the close of this session finds us further advanced both in the College and profession than at any former period. J. T.

#### Wditorial.

#### THE REASON WHY.

A meeting of the Association of the Colleges of Dentistry was held at Philadelphia, March 20, 1867. Delegates were present from the following institutions: Baltimore College of Dental Surgery, Pennsylvania College of Dental Surgery, Ohio College of Dental Surgery, Philadelphia Dental College, and New York College of Dentistry. The principal business was the adoption of rules acted upon at the former preliminary session. This was proceeded with in harmony, and was characterized by the desire to work together for the general good. At the evening session a resolution was introduced by Professor Weiss, of the New York College of Dentistry, the character of which was to prohibit any institution from granting a diploma to any practitioner unless he should attend the regular course of lectures, under the rules previously adopted by the Association, except only to those who had made themselves eminent by valuable contributions. This resolution was modified by Professor Austin, of the Baltimore College, so that instead of a prohibition, the Association would disapprove of the conference of the degree. The introduction of these resolutions were avowedly designed by their authors and supporters to strike at the following rule, which was in force in the Pennsylvania College of Dental Surgery:

"CANDIDATES FOR GRADUATION WHO HAVE NOT ATTENDED LECTURES.

—Dentists who have been in continued practice since 1852, are eligible to be candidates for graduation without attendance on lectures. The candidate for graduation must present satisfactory evidence of his having

been in practice for the allotted time, also of his good standing in the profession: he must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must undergo a satisfactory examination by the Faculty, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. Of this class of graduates, the matriculation and diploma fees only are required."

The passage of the amended resolution was resisted by the Faculty of the Pennsylvania College, as they believed it was the province of colleges not only to teach, but to recognize and reward the merits of men who had by their labors contributed to the advancement of the interests of dentistry. That the indiscriminate granting of degrees was not desired; but that as far as they were concerned, they would abide by the judgment of the profession on the character, reputation and ability of those thus graduating. These and many other reasons, which space will not at present allow us to present, were offered for the non-passage of the resolution; but on a vote by Colleges, it was adopted. As this resolution was considered a censure on the past and prospective course of the Pennsylvania College of Dental Surgery, the Faculty unanimously severed their connection with the Association, and withdrew from the organization.

G. T. B.

#### THE AMERICAN DENTAL CONVENTION.

This Convention assembled on Tuesday, March 5th, 1867, in the City of New York. The number present from a distance would hardly warrant the high sounding title it goes by. With the exception of a few from the New England States and the neighboring counties in New York, the attendance was mainly composed of members of the profession living in New York City and Brooklyn. The committee appointed at the meeting in August to effect some change in the organization, made a report through their chairman, Dr. Rich; but this report was voted down, and it therefore will continue under the old name for at least another year, though, it must be confessed, sadly shorn of the proportions it once possessed. The present Convention, although not as large as it should have been, was still an interesting occasion, the discussions being animated, and entirely composed of practical matters. It seems to us that this Convention never can regain its national character under its present very defective mode of doing business, and its more defective organization. This fact was long since comprehended by others, and hence the organization of the American Dental Association.

To effect anything for the advancement of the profession, we must have a closely organized body, Standing Committees or Sections, to take up any

given subject, and carry it to the fullest development possible. If these committees are composed of earnest, faithful workers, something of value may result. In this Convention no committees were formed, and, of course, we had nothing but badly digested thoughts, with here and there a valuable idea cropping out, but so overloaded with words as to be shorn of half its value. One gentleman, who occupied the largest portion of the time of the Convention in explaining modes of filling teeth, very valuable twelve years ago, very distinctly asserted that they did not care to hear papers read; that he came there to talk, and talk he did.

As usual at such gatherings, there were present men who conceived they had reached the ultimate of knowledge, and were so far in advance of their cotemporaries, that they could assume the role of the dictator, and endeavor by coarseness of language to crush those who had not adopted their modes of doing things. We have had too much of this in our Annual Conventions. It cannot be expected that men will exert themselves to give their best thoughts to the profession, if, in attempting to do this, they are met by language better suited to a lower order of intellect than to the dignity of a National Convention, met for scientific deliberation.

We return our thanks for the many courtesies and hospitalities extended, and should have been most happy to have been present at the social gathering that closed the Convention, which we doubt not was a pleasure to all concerned.

J. T.

#### OBITUARY.

Died, at his residence in the City of Philadelphia, Sunday, January 27, 1867, John R. McCurdy.

It may appear scarcely necessary to do more than announce the death of one so well known, as the reminiscences of the past will call him up in the minds of nearly the whole dental profession of this country; at least to that portion who were in practice previous to 1859. Yet it is hardly paying proper respect to the dead to allow one who was so intimately connected with the interests of dentistry to pass away with a notice of only three or four lines.

JOHN RUTER MCCURDY was born in Philadelphia, December 29, 1817. His parents removed to a farm in Westmoreland County, Pennsylvania, in 1828, taking him along with them. He remained on the farm until be was 17 years of age, when he entered the wholesale drug store of Shinn & Sellers, in Pittsburg, continuing with them five years. In 1839 he came to Philadelphia, intending to follow the same business; but, receiving an offer from Mr. S. W. Stockton, who was then and for a number of years afterwards the principal manufacturer of teeth in this

country, he engaged with him, and in 1842 was sent to New York to assist Mr. A. Jones, who was then an agent for Mr. Stockton. He did not remain long in New York, but returned to Philadelphia to take charge of the sales rooms, being thus employed until December, 1845. In May, 1846, he entered into partnership with Messrs. Ashael Jones, of New York, and S. S. White, of Philadelphia, the style of the firm being Jones, White & Co., which was afterwards changed to Jones, White & McCurdy.

In the Spring of 1851 he visited Europe, having been appointed by the Governor of the State one of the Commissioners to the World's Fair at London. He traveled over Ireland, Scotland and a portion of the continent, forming the acquaintance of many prominent members of the profession, and establishing a large and profitable foreign business.

Finding his health failing, on account of unremitting devotion to business, he retired from the firm in May, 1859, having been an active member for sixteen years, during which time no person could have been more attentive to the business nor polite and just to the customers. In addition to the other business of the firm, he established and edited the Dental News Letter, a standard journal of dentistry, which maintained its reputation as long as it was published. Although retiring from active business, he still maintained a deep interest in the profession by attending regularly the dental conventions, and continued to contribute to the dental journals until his health prevented him.

He was one of the original Trustees of the Pennsylvania College of Dental Surgery, but resigned, as being so much engaged in his business he did not wish to take any more on his hands, but was again elected a member by the Trustees when he had more time to attend to it, and continued an active member until his death.

At a meeting of the Board of Trustees of the Pennsylvania College of Dental Surgery, held on the 26th of February, 1867, the following resolutions were passed:

Resolved, That we have heard with deep sorrow of the recent death of JOHN R. McCurdy, Esq., for many years a member of this Board. By his uniformly genial and kindly deportment he won the affection and esteem of all who knew him; and in his long connection with the dental profession he had become identified as the ardent advocate of its best interests. In his untimely death the Board feel that the College has lost one of its earliest and most steadfast friends.

Resolved, That we offer our warmest sympathies to his family in their bereavement, and that the Secretary be directed to convey to them a copy of these proceedings as a slight expression of our feeling on this mournful occasion.

He was not idle during his retirement; he entered twice the militia service and fared as a common soldier. It was to the exposure and fatigue while encamped on the Potomac, after the battle of Gettysburg, that he attributed the commencement of the disease that terminated his life. He was elected and served for one year in the City Council, but declined a renomination. He was also appointed one of the County Commissioners. All these public positions he filled to the entire satisfaction of his friends: but these were not all the duties he performed: as a citizen, no one was more active; the vacancy will be long felt by those who met him frequently and knew him intimately; and his pastor writes: "He had been a consistent member of church from December 11, 1842, more than 24 years, was always attentive to its interests, and prompt to take part in promoting its prosperity."

Much might be written upon a character like his, but time and space will not permit it here. Long may his example remain as an incentive to others to follow in his footsteps.

T. L. B.

Our readers will perceive by a glance at our advertising columns, that the enterprizing firms of Messrs. W. A. Duff & Co. and Rubencame & Stockton, have passed out of existence; but while this is true, we are pleased to note that this is merely a change in title, as they have associated themselves together under the style of the Philadelphia Dental Manufacturing Company, at their depot, 825 Arch street. The wellknown character for business and energy of the gentlemen engaged in this enterprise, ensures for the Company a successful issue. A glance at their arrangements enables us to say with confidence that they are well prepared to respond to the varied wants of the dentist, either in artificial teeth, instruments, foils or material. The superintendent, Dr. J. J. Griffith, was for many years a successful dentist, Demonstrator of Mechanical Dentistry in the Pennsylvania College of Dental Surgery, and practical tooth manufacturer. He is therefore fully able to know what are the demands of the dental profession. As their intercouse with their patrons is ever characterized by an obliging disposition and desire to please, we bespeak for them a liberal patronage. G. T. B.

#### CORRESPONDENCE.

Boston, January 24th, 1867.

DEAR SIR:—In the January number of the DENTAL TIMES, of which you are one of the editors, in commenting upon the questions at issue between the profession, appear some gross misstatements, which I desire to have publicly corrected. In the middle of the 118th page, you say "it has been stated that the committee appointed, &c., &c., were interested in the stock of the Vulcanite Company."

I beg to state that not a single share of the Company's stock was, or ever had been owned, by any member of that committee. Nor am I aware that but a single one of the delegates to the Convention ever was a stockholder of this Company.

At the bottom of said page, you say that our license contract requires parties to furnish the Company with "the names and residences of the persons to whom plates are furnished, and dates when furnished."

This is a gross mistatement; the Company requires simply the statement of the number of plates put up, full or partial, but no name or personality whatever. (I enclose copy of the only return required.)

The Company do not require the licensee to obligate himself to keep a

record of his work, in order that he may be able to report the number of pieces to them.

You are entirely welcome to exert the influence of your journal in whatever direction it may seem to your interest, but I trust you will have no hesitation in making this correction in your forthcoming number.

The question will soon be tried, and no influence of journalists can con-

trol the result, which is simply a matter of evidence.

JOSIAH BACON, Treas. I remain yours, very truly,

We give Mr. Josiah Bacon and the "Goodyear Vulcanite Company" in particular, the full benefit of our pages to contradict any erroneous assertions that may have been made in this journal. We are glad to learn thus officially, that not a single member of the Boston Commission were directly interested in the stock of the Company. It will doubtless disabuse many minds who have, since the report of that Commission, been of a contrary opinion. We would not willingly injure any one in his reputation, and such was not the intention of the article, although it has been so considered by some of the members of that Commission. We believed it high time the profession should know the facts in the case; and if the rumor had no foundation, these would, in all probability, be brought out by giving it publicity.

Mr. Bacon asserts that the statement made in the last number of the "TIMES," that the Company require the "names and residences of persons to whom plates are furnished, and dates when furnished," is a gross misstatement," and that "the Company requires simply the statement of the number of plates put up, full or partial, but no name or personality whatever."

We would ask Mr. Bacon whether they do not leave with their licensees a blank-book to register cases made, and whether at the head of the first page is not printed the regulations of the Company, in precisely the language given in the last number of the TIMES, and quoted above? and that this book must be at all times free to the inspection of the agent. We presume he will not dare to contradict this fact.

We agree with Mr. Josiah Bacon, that the Courts must settle this controversy, and no amount of words in journals or out of them, will influence this decision; neither will any amount of words from the Rubber Company or its agents, affect the course of this journal; and here we leave the subject.

# PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

THE ELEVENTH ANNUAL SESSION. 1866-'67.



#### TRUSTEES.

HENRY C. CAREY, PRESIDENT, GEORGE TRUMAN, M. D., W. L. ATLEE, M. D., DANIEL NEALL, D. D. S., G. R. MOREHOUSE, M. D., ELLESLIE WALLACE, M. D., THOMAS WOOD, BENJAMIN MALONE, M. D., J. R. McCURDY, W. W. FOUCHE, D. D. S.,

S. DILLINGHAM, D. D. S., CHARLES HAMILTON, SEC'Y.

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EDWIN T. DARBY, D. D. S.,

DEMONSTRATOR OF OPERATIVE DENTISTRY

J. M. BARSTOW, D. D. S.,

DEMONSTRATOR OF MECHANICAL DENTISTRY.

# The Lectures to the Regular Course commence on the 1st of November and continue until the 1st of March.

During the last two weeks of October, preliminary Lectures are delivered, one each day.

The Rooms for Operative and Mechanical Dentistry are open from the lst of October and throughout the session, under the supervision of the Demonstrators.

The Dissecting Room, under the superintendence of the Professor of Anatomy and Physiology, is open during the session.

Fees for the Course, (Demonstrators' Ticket included,) - \$100

Matriculation, (paid but once,) - - - - 5

Diploma Fee. - - - - 30

T. L. BUCKINGHAM, Dean,

C. P. REESS, Janitor. 243 North Ninth St., Philadelphia. P. S.—Board may be had at from \$3.50 to \$6.00 per week.

#### PENNSYLVANIA COLLEGE OF DENTAL SURGERY.

The Eleventh Annual Session, 1866-'67.

The eleventh annual session of the Pennsylvania College of Dental Surgery will commence on the first of November, and continue until the first of March. Preliminary lectures will, however, be delivered each day during the latter half of the month of October. The Dispensary and Laboratory of the College will also be open from that time, where ample opportunities will be afforded for the prosecution of the practical part of the profession under the daily supervision of the Demonstrators, who are gentlemen of known integrity and thorough capability. During October, as well as the entire session, a clinical lecture will be delivered, and operations performed by one of the Professors every Saturday afternoon.

The course is so arranged that fifteen lectures are delivered each week, on the various branches taught in the school. A synopsis of the manner in which each department is treated will be found under the head of the different chairs.

These lectures occupy about the average time of three hours each day. In addition, four hours are daily spent by the student in actual practice. With this object in view, the operating rooms are furnished with twenty chairs, so arranged as to command the best light, and all the appliances necessary for comfort and ease. To these chairs the students are assigned in classes, and certain hours are fixed for each member of the class to operate.

Each student is required to provide his own instruments, (except those for extracting,) and to operate with them. He is expected to keep them in perfect order, and for that purpose is provided with a table in which they can be locked up when not in use. As the operations performed at the College are entirely gratuitous, a superabundance of patients invariably present themselves.

In the mechanical department, every process known in the profession, which has any value to the mechanical dentist, is fully taught; and receipts of valuable compounds are freely imparted. All the conveniences are at hand in the Laboratory for the preparation of metals, manufacture of teeth, (single and in blocks,) mounting, etc.; and the student is required to go through all the necessary manipulations connected with the insertion of artificial teeth—from taking the impression to the thorough construction of the denture, and proper adjustment of it in the mouth of the patient.

In addition to the facilities afforded by the College for a thorough course of instruction in the theory and practice of Dentistry, the celebrated hospitals and clinics of the city constantly enable the student to witness

various important surgical operations which are highly interesting and instructive. The medical and surgical clinics of the Blockley Hospital, in particular, one of the largest eleemosynary establishments in the world, are open to Medical and Dental students, free of charge. The staff of this institution is composed of some of the most eminent physicians and surgeons of Philadelphia.

#### COURSE OF LECTURES.

#### CHEMISTRY AND METALLURGY.

The course of instruction from this chair will commence with the con-

sideration of the imponderable substances.

The laws that govern the imponderable bodies will next claim attention, with some notice of symbols or chemical notations. Individual elements, and the compounds resulting from their combinations, will then be considered. Organic chemistry will receive its full share of attention.

The course will be illustrated by diagrams and such experiments as can

be performed before the class.

#### DENTAL PHYSIOLOGY AND OPERATIVE DENTISTRY.

The lectures in this department will embrace the Physiological Anatomy of the teeth, general and microscopical, in addition to a minute and careful description of the various operations performed by the dental practitioner.

The microscope, models and diagrams, will be employed in illustration. At the Clinic the incumbent of this chair will also demonstrate before the class the various operations described in his course of lectures.

#### MECHANICAL DENTISTRY,

The instruction from this chair will embrace the entire range of manipulations legitimately connected with the laboratory, arranged in two divisions—Mechanical Dentistry proper, and that to which has been applied

the appellation of the Plastic department.

1. Mechanical dentistry proper will include everything appertaining to the construction of dental substitutes, passing through the different stages of preparation, from taking the impression, to the completion and proper adjustment of the case in the mouth, conjointly with features, expression of countenance, enunciation, etc. It will likewise embrace the metallurgic treatment of the various metals employed, the preparation of plate and wire, the alloying of gold, together with the alloys used, as well as those designated as solders.

II. This division will comprise all that appropriately belongs to the manufacture of porcelain or mineral teeth—single teeth, block-work, continuous gum-work, vulcanite, etc. The materials, their preparation,

compounds and uses, will be specially regarded.

All new inventions, modifications, and improvements, in this branch of the art, will in place receive due attention and investigation.

#### PRINCIPLES OF DENTAL SURGERY AND THERAPEUTICS.

The lectures delivered from this chair will embrace General Pathology, Dental Pathology, the Pathological Relations of the Teeth to other parts of the System, together with a minute description of all special diseases that have any relation to Dental Surgery, or of interest to the Dentist.

They will also include a careful examination of therapeutic agents and their general application. Their indications in the medical and surgical treatment of diseases of the mouth, both idiopathic and symptomatic, will be fully illustrated, and also the general hygienic rules and principles which come within the province of the practitioner.

#### ANATOMY AND PHYSIOLOGY.

The instruction in this department will embrace a plain and comprehensive view of the structure and functions of the Human Economy. valuable anatomical preparations of the incumbent of this chair, (consisting of Papier Mache manikins, models in wood, drawings, wet and dry preparations,) will enable him to fully illustrate his course. With the same object, vivisections on the lower animals will also be employed.

The special relations of this branch to the wants of the dentist will be kept steadily in view, and such descriptions of the natural history, micro scopical structure, connections, &c., of the teeth, as their importance

demands, will be given.

The great facilities for the study of practical anatomy, to be found is the city of Philadelphia, obviate the necessity of providing a dissectingroom in the College. For the usual fee of \$10, the student can have access to one of several well-ordered and well-supplied dissecting-rooms.

#### QUALIFICATIONS FOR GRADUATION.

The candidate must be twenty-one years of age. He must have studied under a private preceptor at least two years, including his course of instruction at the College. Attendance on two full courses of lectures in this institution will be required, but satisfactory evidence of having attended one full course of lectures in any respectable dental or medical school, will be considered equivalent to the first course of lectures in this College. Also satisfactory evidence of having been in practice five years, inclusive of the term of pupilage, will be considered equivalent to the first course of The candidate for graduation must prepare a thesis upon lectures. some subject connected with the theory or practice of dentistry. He must treat thoroughly some patient requiring all the usual dental operations, and bring such patient before the Professor of Operative Dentistry. He must, also, take up at least one artificial case, and after it is completed, bring his patient before the Professor of Mechanical Dentistry. He must, also, prepare a specimen case to be deposited in the College collection. The operations must be performed, and the work in the artificial cases done, at the College building. He must also undergo an examination by the Faculty, when, if found qualified, he shall be recommended to the Board of Trustees; and, if approved by them, shall receive the degree of Doctor of Dental Surgery.

Candidates for graduation who have not attended lectures.—Dentists who have been in continued practice since 1852 are eligible to be candidates for graduation without attendance on lectures. The candidate for graduation must present satisfactory evidence of his having been in practice for the allotted time, also of his good standing in the profession, he must prepare a thesis upon some subject connected with the theory or practice of dentistry. He must present specimens of his workmanship. He must undergo a satisfactory examination by the Faculty, when, if qualified, he shall be recommended to the Board of Trustees, and if approved by them, shall receive the degree of Doctor of Dental Surgery. Of this class of graduates, the matriculation and diploma fees only are required.

#### TEXT BOOKS AND WORKS OF REFERENCE.

Wilson's, or Leidy's Sharpey & Quains' Anatomy; Carpenter's Physiology, or Dunglison's Human Physiology; United States Dispensatory; Mitchell's Materia Medica; Fownes' Elements of Chemistry; Regnault's Chemistry; Lehmann's Pysiological Chemistry; C. J. B. Williams' Principles of Medicine; Wood's Practice; Tomes' Dental Physiology and Surgery; Harris' Principles and Practice; Taft's Operative Dentistry; Richardson's Mechanical Dentistry; Paget's Surgical Pathology, or other standard works on the subject.

#### DR. B. WOOD'S

# PLASTIC METALS FOR DENTAL USE

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Wood's Plastic Metallic Fillies. (Patented March 20, 1860, and September 4, 1864.) Price \$3 an ounce, Troy weight. Put up in 1 oz., § oz. and § oz., ingots, each stamped with the name of the Patentee and the date of both patents.

Wood's Amalgamated Filling.—\$2 an ounce.—It contains a small proportion of mercury, and the ingots are accordingly stamped "Amalgamated."

WOOD'S PLASTIC FUSIBLE METAL.—For Mechanical Dentistry.—Repairing Rubber Work—and for Solder, etc.—(Patent March 20, 1860.) \$1.50 per oz.—This is not designed for filling teeth—requiring too high a heat, &c. It is distinguished from the "Filling" by the patent mark.

Wood's SILVER AMALGAM.—In filings, \$4 an ounce. It requires less mercury than the ordinary preparations, and is superior in all the other requisites. Sample packages of \( \frac{1}{2} \) oz., at \( \frac{1}{3} \)1.

Pluggers for Using the Plastic Metallic Filling, &c.—In sets of 8 or 12, steel handles, at \$3 and \$4.50 a set, respectively. Each instrument is stamped—"Wood's Patent, Feb. 28, 1865," any offered for sale that are not so stamped are infringements.

All letters should enclose stamps for return postage.

ADDRESS

B. WOOD, M. D., Dentist,
ALBANY., N. Y

# ARTIFICIAL TEETH.



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AT THE

# WORLD'S FAIR IN PRUSSIA, 1865,

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The attention of Dentists is called to our late patterns of

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Our assortment of Block Teeth for Rubber Base is quite varied.

#### PRICES.

Blocks or Sections for Rubber Base,	20	cents.
Single Gum Teeth, " " Plate Work,	20	• 6
" Plate Work,	20	44
Plain Teeth, for Plate Work	10	44
" for Rubber Work	10	4.
Pivot Teeth,	8	. 64

#### MOTICE.

Our Teeth for Rubber Work have DOUBLE-HEADRD PINS. These are distinct and well formed. One of them is really inserted in the tooth, the other is at the extremity of the pin, OUTSIDE. We thus secure a firm resistance in the body of the tooth, and ample space for the resention of the rubber around the pin outside. Our customers pronounce them "Excelsior."

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# DENTAL TIMES,

A

QUARTERLY JOURNAL

OF

## DENTAL SCIENCE.

EDITED AND PUBLISHED BY

THE FACULTY

OF THE

Venusylvania College of Jental Surgery.

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#### TO THE PROFESSION.

In issuing the "DENTAL TIMES," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

Persons desiring to become subscribers, can do so by remitting the price of subscription, one dollar per annum, with name and address, to Dr. T. L. Buckingham, 243 North Ninth street, Philadelphia.

As we desire to keep a corrected list of the dentists in the United States, our friends and subscribers will please notify us when changing their location.

# DEMONSTRATORS' REPORT.

ALL OPERATIONS IN THE CLINICS OF THIS INSTITUTION ARE PERFORMED GRATUITOUSLY FOR THE BENEFIT OF THE POOR ONLY.

#### SESSION OF 1864-'65.

#### OPERATIVE DEPARTMENT.

	Patients visiting the Clinic,r whom the following operations were performed,	
	. , ,	
Gold Filli	<b>167</b> j	
Tin do	********* *****************************	
	tal,	
	ping,	
	and Filling Pulp Cavities,	
Buperficial	Caries Removed,	
	f Salivary Calculi,	
Treatment	of Periostitis,	91
Do	Alveolar Abecess,	
Do	Inflammation of the Gums,	
Do	Partial Necrosis,	
Do	Irregularities,	
Pivot Teet	h inserted,	9
	of Teeth and Boots,	
		······································
	Total,	

JAMES TRUMAN, Demonstrator.

#### MECHANICAL DEPARTMENT.

154 Patients were supplied with the following Artificial Dentures:

Full Upper Se Full Lower Se	f Teeth,	3
Do Lower	Bets,	4
•	ed on Metal Plates,	
Do	Hard Rubber Base,	
Whole Number	er of Gum Teeth,	902
Do '	Plain Teeth,	1107
Do	Teeth Mounted,	

J. M. BARSTOW, Demonstrator.

[#] These were made for soldiers having lost their teeth and adjacent bones from gunshot wounds.

## MATRICULANTS.

#### NINTH ANNUAL SESSION, 1864-'65.

•	
ROBERT JAS. ADAMS,New York.	C. B. Mc
BENJAMIN J. BING, Maryland.	FRANCI
SAMUEL A. BEECHER, Missouri.	CHARLE
HENRY BLAKENEY,New York.	WM A. I
HOWARD BASSETT,New Jersey.	P. PRE1
JOSE BERTRAM,Cuba.	JAMES .
GASPER A. BETANCOURT, "	ABRAM
JOHN R. BUCKINGHAM Pennsylvania.	8. G. PI
EDWIN C. BAXTER, D. D. S., Maine,	JARED
J. WESLEY CLEMSON, Pennsylvania.	JAMES :
AUGUST CULMAN, M. D.,Bavaria.	THOMAS
P. M. CHRISTIE,Pennsylvania	THOMAS
FREDERICK K. CROSBY,Connecticut.	H. C. B
EDWIN T. DARBY,New York.	H. P. R
E. S. DAVENPORT,	H. C. R
HORACE ENOS,Pennsylvania	A. EMO
MICHELE FICHERA, Sicily.	JOHN 8
SIMON FRAUCuba.	C. S. ST
JOHN N. FARRAR,	WILLIA
ENOCH S. FOGG,Pennsylvania.	GEORGI
JOHN FRASIER,Maryland.	WM. H.
SIMEON H. GUILFORD,Pennsylvania.	WM, H.
JESSE C. GREEN,	A. P. T(
CANBY HATHAWAY,	J. J. VA
JAMES O A. JOHNSON, New Jersey.	CARLOS
JONAS Y. KERN,Pennsylvania.	AUGUST
DANIEL J. LALLY, New York.	J. A. W
WM. R. LINEAWEAVER,Pennsylvania.	J. B. R.
JOHN LYNAM, M. D.,Ireland.	
, ,	

	December 1
C. B. McGRATH,	.Penmyivana.
PRANCIS MIGNOTTE	
CHARLES A. MILBANK,	.New IOIK.
WM A. NEWLAND, JR,	Pennsylvants
P. PRETERRE, M. D.,	New York.
JAMES PARSONS,	.Wisconsin.
ABRAM PRATT,	Pennsylvania.
S. G. PERRY,	New York.
JARED A. PERKINS,	.Massach usetts
JAMES B. RONEY,	Pennsylvania.
THOMAS ROBINSON,	.Delaware.
THOMAS ROBSON, JR.,	Penasylvania.
H. C. BOCKWELL,	.New York.
H. P. ROBERTS,	Illinois.
H. C. REGISTER,	.Maryland.
A. EMORY STREET,	.New Jersey
JOHN SHELDON,	
C. S. STOCKTON.,	
WILLIAM SMEDLEY,	
GEORGE B. SANFORD,	New York.
WM. H. SCHOLL,	.Pennsylvania
WM. H. TRUEMAN,	. "
A. P. TOMPKINS,	
J. J. VANDERFORD,	
CARLOS DEL VILLAR,	
AUGUSTIN DE VARONA,	
J. A. WOODWARD,	
J. B. R. WRIGGINS	
T. D. II. WALGUING	versey

### GRADUATES, 1864-'65.

	_	
GASPER A. BETANCOURT,	Cuba,	Filling Pulp Cavities and Boots of Teeth.
SAMUEL A. BEECHER,	Missouri,	Sulphuric Ether.
HOWARD BASSETT,	.New Jersey,	Diseases Incident to First Dentition.
BENJAMIN J. BING,	.Maryland,	.Dentistry, a Science.
J. WESLEY CLEMSON,	.Pennsylvania,	Predisposing Causes to Dental Carles.
AUGUST CULMAN, M. D.,	Bavaria,	.Neuralgia of the Trigeminus.
EDWIN T. DARBY	New York,	Dentistry, a Profession.
HORACE ENOS,	.Pennsylvania,	.Vulcanized Rubber.
SIMON FRAU	.Cuba	.Ether.
MICHELE FICHERA,	.Sicily,	.Filling Teeth.
T. N. FARRAR	.Massachusetts,	Intermittent and Hysterical Neuralgia.  Vascularity of Dentine.
SIMON GUILFORD,	.Pennsylvania,	.Vascularity of Dentine.
JAMES O. A. JOHNSON	New Jersey	Extraction of Teeth.
JOHN LYMAN, M. D.,	.Ireland,	.Military Dentistry.
C. A. MILBANK,	.New York,	Diseases Attending First Dentition.
CHAS. B. McGRATH,	Pennsylvania,	.Hysteria.
WM. A. NEWLAND,	. "	Fractures of the Teeth.
OHAS. B. McGRATH, WM. A. NEWLAND, ABRAM PRATT,	. "	.Odontology.
8. G. PERRY,	New York,	.Inflammation.
P. PRETERRE, M. D.,	"	Development of Teeth.
JARED A. PERKINS	.Massachusetts	.Cause of Dental Caries.
THOS. ROBINSON,	. Delaware,	.Irregularities of the Permanent Teeth.
THOMAS ROBSON, JR.,	.Pennsylvania,	.Rubber.
HEWLETT. C. ROCKWELL,	New York,	Nitrous Oxide.
A. EMORY STREET	New Jersey	Entire Artificial Dentures.
W. H. SCHOLL,	Pennsylvania,	lndurated Rubber.
GEO. B. SANFORD	New York	Teeth and their Diseases.
J. B. B. WRIGGENS,	New Jersey	Caries of the Teeth.
J. A. WOODWARD,	Pennaylvania,	Treatment of Exposed Dental Pulp

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Of his own, and other manufacturers, of the most

Salfrigg Capfill?

AND

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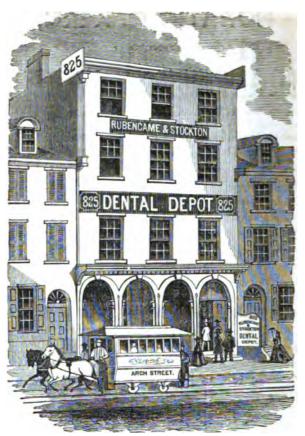
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During the months of September and October several preliminary lectures will be given weekly, and every advantage for the prosecution of Practical Anatomy offered to the student. The regular course of lectures on Anatomy begins about the last of October and ends the 1st of March. The lectures are given at such an hour as not to interfere with the collegiate engagements of the student. The Lecture Room and the Dissecting Rooms supplied with ample material, are admirably ventilated, lighted and heated, and arranged in the best possible manner for purposes of Practical Demonstration.

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**OCTOBER, 1865.** 

THE

# DENTAL TIMES,

QUARTERLY JOURNAL

## DENTAL SCIENCE.

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#### TO THE PROFESSION.

In issuing the "DENTAL TIMES," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

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	whom the following operations were performed,	
laid Filling	8,	627
in do		606
	<b>L</b> ,	
Iill's Stopp	ing,	
malgam		19
	nd Filling Pulp Cavities,	
	Caries Removed,	
	Salivary Calculi,	
reatment o	f Periostitis,	
Do	Alveolar Abscess,	
Do	Inflammation of the Gums,	
Do	Partial Necrosis,	
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lvot Teeth	inserted,	
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81	th,	Whole Sets of
48	•	Full Upper Se
	eks,	Full Upper Se
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	,	Do Lower
		Obturators,#
	Metal Plates,	
	Hard Rubber Base,	Do
902	Gum Teeth,	Whole Numbe
1107	Plain Teeth,	Do
	•	
2009	Teeth Mounted,	Do

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SAMUEL A. BEECHER,	Missouri,	., Sulphuric Ether.
HOWARD BASSETT	New Jersey	Diseases Incident to First Dentition.
BENJAMIN J. BINĞ,	Marvland	Dentistry, a Science.
J. WESLEY CLEMSON	Pennsylvania	Predisposing Causes to Dental Caries.
AUGUST CULMAN, M. D	Bava is	Neuralgia of the Trigeminus.
EDWIN T. DARBY,	New York	Dentistry, a Profession.
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SIMON FRAU	Cuba	Ether.
MICHELE PICHERA,	Sicily.	Filling Teeth.
T. N. FARRAR	Massachusetts	Intermittent and Hysterical Neuralgia.
SIMON GUILFORD	Pennsylvania	Intermittent and Hysterical Neuralgia. Vascularity of Dentine.
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JOHN LYMAN. M. D.	Ireland	Military Dentistry.
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WM. A. NEWLAND.	,	Practures of the Teeth.
ABRAM PRATT.		. Odontology.
8. Q.   EKKY	New York	Inflammation.
P. PRETERIE, M. D.,	46	Development of Teeth
JARED A PERKINS	Massachusetts	Cause of Dental Caries.
THOS. ROBINSON	. Delaware	Irregularities of the Permanent Teeth,
THOM AS ROBSON, JR	. Pennsylvania.	Rubber.
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A. EMORY STREET.	New Jersey	Entire Artificial Dentures.
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GEO. B. SANFORD	New York	Teeth and their Diseases
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J. A. WOODWARD	Penneylvania	Treatment of Exposed Dental Pulp

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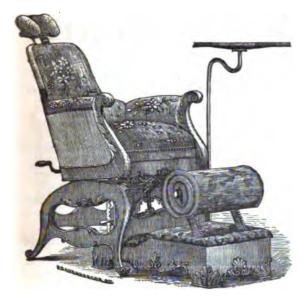
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# SURGICAL & DENTAL INSTRUMENTS, FILES, &C.

The subscriber would again remind the profession that he still continues to manufacture all kinds of Instruments, Dental Files, &c.

From the flattering testimonials he has received, (of which a few are appended,) of the superior quality of his Instruments and Files, he feels confidence in his ability to produce an article fully equal to any made.

Assiduous attention to the details of the business, (with an experience of thirty years,) has enabled him to make many improvements in the adaptation to the specific purpose; and, as the success of an operation depends, in some degree, on the adaptation of the instruments to the particular character of the operation, it needs no argument to convince those wishing to procure instruments, of the importance of purchasing the manufacture of those of long and well established reputation. Any orders tendered him will be promptly attended to. Illustrated catalogues will be furnished on application.

HORATIO G. KERN,

No. 25 North Sixth Street, Philadelphia.

#### TESTIMONIALS.

501 NORTH SEVENTH STREET, Philadelphia, June 8th, 1863.

H. G. Kern—Dear Sir—The excavators which you handed me some days since I have had in constant use, and take great pleasure in stating that I believe them to be a superior article, both in their ability to retain a sharp cutting edge, and withstand the force essential to the operation.

Yours, &c.

C. N. PEIRCE, D. D. S.

MR. H. G. KERN—Dear Sir—The excavators recently manufactured by you have been used with the utmost satisfaction. I can give them an unqualified recommendation. Yours, respectfully,

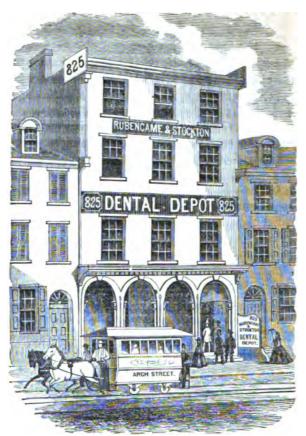
June 26th, 1863.

GEO. T. BARKER, D. D. S.

MR. H. G. Kern—Dear Sir—The last excavators obtained from you are of a very superior quality. I can recommend them as being equal to any I have ever used.

T. L. BUCKINGHAM, D. D. S.

June 25h, 1863.



## BENTAL BEPOT.

825 ARCH STREET.

### PHILADELPHIA, PA.

Manufacturers of POROELAIN TEETH, GOLD AND TIN FOILS.

Dealers in every variety of INSTRUMENTS AND MATERIALS required by the Dentist. All orders carefully and promptly filled. Write plainly giving name and residence in full, and address

RUEBNOAME & STOOKTON, 825 Arch Street, Phila

#### CARD.

The undersigned having connected himself with Messrs. RUBENCAME & STOCKTON, as a Special Partner, in the manufacture of Porcelain Teeth, Dental Material, etc., is desirous of renewing the business intercourse with the Dental Profession, which ill-health compelled him to suspend some years since.

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He pledges himself that nothing shall be wanting on his part to make the renewed relations as pleasant and as satisfactory as those heretofore maintained.

Respectfully,

JOHN R. McCURDY.

## ARTIFICIAL TEETH.

The subscribers take pleasure in stating, that, as a result of years of application to this particular branch of business, and by the right use of means, men and material, they are now able to produce as good an assortment of Artificial Teeth, as can be found in the country, embracing those used for both Rubber and Plate work of every variety, in size, shape and shade, and combining with all, strength and adaptation. Particular attention is directed to our more recent make, among which will be found styles and shades to suit the most fastidious. Scores of certificates are in our possession, showing the appreciation of our numerous friends, and testifying their entire satisfaction. Parties sending casts by mail, express or otherwise, can have teeth properly selected for them and receive prompt returns.

Liberal discount to dealers. Address

### RUBENCAME & STOCKTON, 825 ARCH STREET, PHILA.

### GOLD FOIL.

We are prepared to supply the Profession with a very superior quality of our own make of Gold Foil. This Foil is made of double-refined gold, and is soft and adhesive. It is put up carefully in books, each of which contains the full weight marked upon it. Below we give a few certificates, attesting its good working qualities, and its thorough fitness for even the nicest operations.

#### RUBENCAME & STOCKTON.

#### CERTIFICATES.

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### TIN FOIL.

We have also for sale a superior article of CHEMICALLY PURE TIN FOIL, of our own make, which we believe will give full satisfaction. Price per book, 50 cents.

RUBENCAME & STOCKTON.

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The subscribers are the only persons duly authorized by the inventor, to manufacture the above preparation. Put up in two ounce bottles, with brush. Price 50 cents. For sale by

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Whitney's one, two and three Case, with Thermometer, Lamp or Gas Burner, Flasks and Wrenches complete; also an assortment of Hayes' Boilers and Ovens, ready tor use.

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A full assortment of Half-round and Double-end Files for rubber work, smooth, medium and course, different lengths, with and without handles, at prices ranging from 25 to 50 cents each.

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We have just received a full assortment of SCRAPERS, of every variety and shape desirable, well made. Price 30 cents.

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A full assortment of the best makes of instruments, embracing all the new and desirable patterns, constantly on hand and for sale by

RUBENCAME & STOCKTON.

### LIQUID SILEX.

We have prepared a quantity of this material, for mending broken teethclosing crevices between the blocks, and for varnishing casts to prevent the plaster from adhering to the rubber. Price per bottle, 25 cents.

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## College Abenne Anatomical School,

### IN CHANT ST., OPPOSITE ST STEPHEN'S CHURCH,

PHILADELPHIA

### WINTER ANNOUNCEMENT OF 1865-66.

The DISSECTING HALL AND OPERATIVE ROOMS of this well-established Institution will be open as usual on the 1st of September, for the ensuing session.

During the months of September and October several preliminary lectures will be given weekly, and every advantage for the prosecution of Practical Anatomy offered to the student. The regular course of lectures on Anatomy begins about the last of October and ends the 1st of March. The lectures are given at such an hour as not to interfere with the collegiate engagements of the student. The Lecture Room and the Dissecting Rooms supplied with ample material, are admirably ventilated, lighted and heated, and arranged in the best possible manner for purposes of Practical Demonstration.

The ANATOMICAL MUSEUM, recently much enlarged, is supplied with preparations, plates, models, and everything necessary to ILLUSTRATE AND IMPART instruction in this fundamental branch of Medicine.

The Antiseptics now used in preparing and injecting the Cadaver, allow dissecting to be prosecuted even during the heat of Summer.

In September the rooms will be open during the entire day for the student to prosecute his work. In October, the Demonstrations in the evening will commence, and continue during the entire session until March.

During the hours for Demonstration the Lecturer or his assistant will be in the rooms to assist the student in his dissections.

W. S. FORBES, M. D.

## W. A. DUFF & CO.

MANUFACTURERS OF

## PORCELAIM TEETH

### No. 516 ARCH STREET,

PHILADELPHIA.

We invite the attention of Dentists and Dealers to our assortment of ARTIFICIAL TEETH, believing them equal to any offered to the profession.

We are prepared to furnish every variety of Plain and Gum Teeth for Gold and Silver Plate, and Rubber or Vulcanite Work, including Block and Single Teeth, for Vulcanite, with

#### PATENT MACHINE-MADE

## DOUBLE-HEADED PINS.

These Pins have really two distinct and well-formed heads, one in the tooth, preventing the possibility of their being drawn out, and one for insertion in the Rubber. The upper central blocks have each five pins, and the lower central and side blocks each four; together, Fifty Double-headed Pins in each full set, our machinery enabling us to finish them in this improved manner, in which way they are not made by any other manufacturer.

From the many testimonials received in regard to their STRENGTH, we are led to believe they are

### THE STRONGEST TEETH MADE.

We are also prepared to furnish a full assortment of DENTAL INSTRUMENTS, &c., from the well-known manufacturers,

### JOHN D. CHEVALIER & SONS.

### Also, Lathes, Vulcanizers, Archer's Improved Dental Chairs,

FOOTSTOOLS, SPITTONS, TRAYS, &c., &c., including the various articles used by the procession.

W. A DUFF, Dr. J. J. GRIFFITH, D. D. S. W. A. DUFF & CO., 516 Arch Street, Phila.

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NO. 3.

THE

## DENTAL TIMES,

A

QUARTERLY JOURNAL SEP 10 1889

DENTAL SCIENCE.

EDITED AND PUBLISHED BY

DRS. T. L. BUCKINGHAM,

E. WILDMAN, W. S. FORBES,

G. T. BARKER,

AND JAMES TRUMAN,

FACULTY

OF THE

Zennsylvania College of Dental Surgery.

PHILADELPHIA.

PRICE \$1.00 A YEAR, IN ADVANCE.

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### TO THE PROFESSION.

In issuing the "DENTAL TIMES," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

Persons desiring to become subscribers, can do so by remitting the price of subscription, one dollar per annum, with name and address, to Dr. T. L. Buckingham, 243 North Ninth street, Philadelphia.

As we desire to keep a corrected list of the dentists in the United States, our friends and subscribers will please notify us when changing their location.

### DEMONSTRATORS' REPORT.

ALL OPERATIONS IN THE CLINICS OF THIS INSTITUTION ARE PERFORMED GRATUITOUSLY FOR THE BENEFIT OF THE POOR ONLY.

### SESSION OF 1864-'65.

### OPERATIVE DEPARTMENT.

Number of	Patients visiting the Chinic,	2600
Mumber fo	or whom the fellowing operations were performed,	1487
Gold Filk	nge,	
Tin do	***************************************	
Wood's M	etal ₄	
Hill's Stor	pping	10
Amalgam.		
Treatment	and Filling Pulp Cavities,	176
Superficial	Caries Removed,	
Removal o	of Salivary Calculi,	51
	ef Periostitis	
Do	Alveolar Abscees,	
Do	Inflammation of the Gums,	
Do	Partial Necrosis,	
Do	Irregularities,	10
Pivot Tee	th Inserted,	
	ef Teeth and Boots,	
	Total,	

#### JAMES TRUMAN, Demonstrator.

### MECHANICAL DEPARTMENT.

#### 154 Patients were supplied with the following Artificial Dentures:

Full Upper S Full Lower S	of Teeth,	
	let, Riccks,r Bets,	
Do Lowe	r Sets,	
Teeth Mount	ted on Metal Plates,	528
Do Whole Numb	per of Gum Teeth,	
Dq	Plain Teeth,	1107
De	Teeth Mounted,	2009

J. M. BARSTOW, Demonstrator.

[#] These were made for soldiers having lost their teeth and adjacent bones from gunshot wounds.

### WATRICULANTS.

### NINTH ANNUAL SESSION, 1864-'65.

BOBERT JAS. ADAMS,	C. B. McGRATH, Cuba. CHARLES A. MILBANE, Kew York. WM A. NEWLAND, Ja, Pennsylvania. P. PRETERRE, M. D., Rew York. JAMES PARSONS, Wisconsia. ABRAM FRATT, Prinsylvania. S. G. PERRY, New York. JARED A. PERKINS, Messachusetts JAMES E. BONEY, Pennsylvania. THOMAS ROBSON, Ja, Pennsylvania. THOMAS ROBSON, Ja, Pennsylvania. H. C. ROCKWELL, New York. H. P. BOBERTS, Illinots. H. C. REGISTER, Maryland. A. EMORY STREET, New Jersey. JOHN SHELDON, New York. WILLIAM SMEDLEY, Pennsylvania. GEORGE B. SANFORD, New York. WM. H. SCHOLL, Pennsylvania. WM. H. TRUEMAN, " A. P. TOMPKINS, " J. J. VANDERFORD, Maryland. CARLOS DEL VILLAR, Cuba. AUGUSTIN DE VARONA, "
DANIEL J. LAĒLY,	J. A. WOODWARD,Pennsylvania, J. B. B. WRIGGINSNew Jersey

### GRADUATES, 1864-'65.

	,	
GASPER A. BETANCOURT	Cubs	"Filling Pulp Cavities and Roots of Teeth
SAMUEL A. BEBCHER,	Missouri	Sulphuric Ether.
HOWARD BASSETT	New Jersey	Diseases Incident to First Dentition.
BENJAMIN J. BING,	Marvland	Dentistry, a Science.
J. WESLEY CLEMSON	Pennsylvania	Predisposing Causes to Dental Carica.
AUGUST CULMAN, M. D.,	Bavaria	Neuralgia of the Trigeminus.
EDWIN T. DARBY,	New York	Dentistry, a Profession.
HORACE ENOS,	Pennsylvania,	Vulcanized Rubber.
SIMON FRAU,	Cuba,	Ether.
MICHELE PICHERA,	8icily,	Filling TeethIntermittent and Hysterical Neuralgia.
T. N. FARRAB,	Massachusetts,	Intermittent and Hysterical Neuralgia.
BIMON GUILFÓRD,	Pennsylvania,	Vascularity of Dentine.
JAMES O. A. JOHNSON,	New Jersey,	Extraction of Teeth.
JOHN LYMAN. M. D.,	Ireland,	Military Dentistry.
C A MILBANK	New York	Diseases Attending First Dentition
CHAS. B. McGRATH,	Pennsylvania,	. Hysteria.
WM. A. NEWLAND,		Fractures of the Teeth.
CHAS. B. MCGRATH, WM. A. NEWLAND, ABBAM PR.TT, S. G. FERRY,	"	Odontology.
8. G.   ERRY,	New York	lnflammation.
P. PAELERKE, M. D.,	,	Development of leeth.
JABED A. PERKINS	Massachusetts	Cause of Dental Caries.
THOS. ROBINSON,	Delaware,	Irregularities of the Permanent TeethRubber.
THOMAS ROBSON, JR	Pennsylvania	Rubber.
REWLETT. C. ROCKWELI	New York	Nitrous Ox <b>ide.</b> -
A. EMORY STREET,	New Jersey	Entire Artificial Dentures.
W. H. SCHOLL,	Pennsylvania,	indurated Rubber.
GEO. B. SAN PORD	New York	Teath and their Diseases
J. B. R. WRIGGENS,	New Jersey	Caries of the Teeth.
J. A. WOODWARD	Pennsylvania	Treatment of Expeded Dental Pulm

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Price, \$3 an Ounce, Troy Weight.

This Material is not only considered the best yet known for filling teeth except gold, but invaluable for repairing rubber plate work, and various other uses about the office and laboratory—being absolutely free from mercury, it can be used advantageously in connection with gold and silver, without discoloration or injury to them.

The Plastic Metallic Filling is put up in thin ingots or bars, convenient for use, about  $\frac{1}{20}$  of an inch in thickness, and  $\frac{2}{3}$  of an ounce in weight, each stamped with the name of the patentee and the dates of the patents.

Price, \$2 an ingot; postage free. Half ingots, \$1.

For particulars apply for a circular.

## PLUGGERS FOR USING THE FILLING.

Patented Feb. 28, 1865.

In sets of eight or twelve, steel handles, at \$3 and \$4.50 a set respectively. Postage 24 and 36 cents.

With Silver and German Silver Bulbs and Points, from \$6 to \$20 a set, according to style and material.

Rights to manufacture and sell these instruments granted on reasonable terms.

Dr. B. WOOD, Dentist,

ALBANY, N. Y.

January, 1866.

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MANUFACTURER OF

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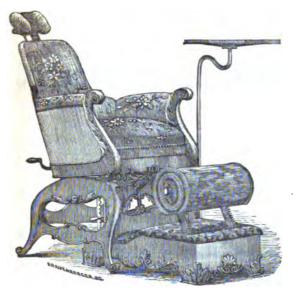
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## DENTAL PROFESSION

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Solfblor Corfill

AND

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All orders from abroad will be punctually and thoroughly attended to.

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For the Sale of the Latest Improved Teeth,

FOR ALL KINDS OF RUBBER AND PLATE WORK,

WITH DOUBLE HEADED PINS.

Together with a large assortment of all kinds of Dental Instruments, and other articles needed by the profession.

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Packages	containing	1	0Z.,	-	-	-	\$3.00
Do.	do.	6	dwts.,	-	-	-	1.00

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POUGHKEEPSIE, N. Y.

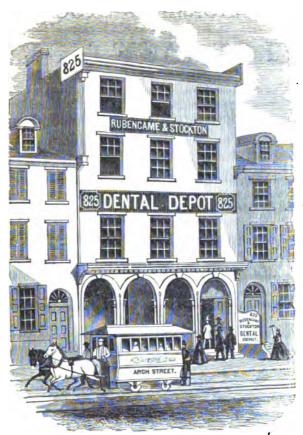
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Respectfully,

JOHN R. McCURDY.

## PORCELAIN TEETH.

Our teeth continue to give the utmost satisfaction to all who use them. The many improvements we are introducing in styles and shades are gaining for us new friends every day, and from all parts of the country we are in receipt of the highest encomiums. Already it is conceded, by a large proportion of the dental profession, that our make of teeth stand foremost in every particular. Many are the statements which we receive, directly and indirectly, asserting, with emphasis, that they are equal to any, and even superior to most of those offered by other manufacturers.

To any who have not used our teeth, we would say, give us a fair trial.

All orders promptly attended to.

Our terms to consumers and dealers are liberal. Address

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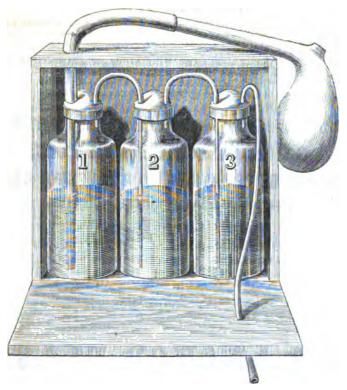
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The above cut represents Dr. Moseley's Nitrous Oxide Gas Generator, with Retort

In position on top, and one side let down so as to show the inside fixtures.

This is the most Compact, Efficient and Economical Apparatus ever offered to the dental profession. The Gas is thoroughly washed by being forced through the chemical baths, and is ready for immediate use. Twenty minutes will suffice to make enough for one operation.

The size of the Generator is sixteen inches long, four inches wide, and fourteen inches

deep, and the weight about ten pounds.

THE PRICE HAS BEEN SO REDUCED, that we can now furnish the Apparatus complete, (including the Generator, Retort, Inhaling Bag, (7 gall.,) Rubber Mouth-piece, and two sets of Chemicals,) for twenty-five dollars. Boxing, extra, one dollar and fifty cents.

#### LIST OF PRICES.

Gas Generator, Inhaling Bag, 5										
The Table	Parion									
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" " 7										
Gasometer, 40	**			· • • · · · ·						18 00
Retorts, quarts										
Rubber Mouth-piece,									2 50	
Ammonia, Fused, best, per pound										
" Crys	talized,	best, pe	r pour	d,	•••••	• • • • • •		•••••	• • • • • • •	75

### RUBENCAME & STOCKTON.

925 ARCH STREET, PHILA.

#### TAKE NOTICE.

A short man, with red hair, red whiskers, and soar on one cheek, is traveling through the country, and offering teeth for sale which he represents as of our make. He claims also to be an agent for a new vulcanite base, and talks glibly. We pronounce him an impostor, and caution all parties against having any dealings with him.

RUBENCAME & STOCKTON, 825 Arch street. Phila.

#### INSTRUCTIONS

IN THE

### PREPARATION, ADMINISTRATION and PROPERTIES

## OF NITROUS OXIDE, PROTOXIDE OF NITROGEN OR LAUGHING GAS,

FOR DENTAL AND SURGICAL PURPOSES,

BY GEO. T. BARKER, D. D. S.,

Professor of Principles of Dental Surgery and Therapeutics in the Pennsylvania College of Dental Surgery.

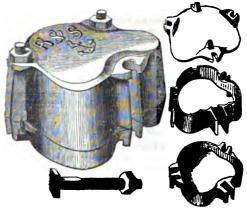
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PHILADELPHIA, 1866.

Will be ready in April.

Price, one dollar.

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Price.	Brass. each,	\$2 00
**	Iron, Galvanized, each,	1 50
4.6	· · · · each	1 25
46	Bolt and Nut	10
• •	Wrench,	10

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From the large advance in the price of all the materials used in the manufacture of vulcanisers—in the labor and government tax—I am compelled to advance the price of my machines enough to cover the increased cost of manufacture.

I have kept along, at the old prices, during the last year and a half, realizing very little profit, hoping that prices would go down, but from the continual advance such cannot be expected.

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Vulcanizers, 2 Flask, Lamp or Gas Burner, complete for use,\$15									75
66	3	66	"	"	66	"	••••	16	80
Extra,	for both	Lamp	and G	as Burner,					5υ
66	Thermon	neter,	Tube a	and Scale, (by	mail 6 cen	ts posts	ge,)	1	00
66	Flasks o	f Mal	lle <b>abl</b> e l	Iron,		• • • • •			871
46	Lamps,.			• • • • • • • • • •		• • • • • •			75
.66	Gas Bu	ner,.							75
66	Wrench	for F	lask,						10
46	Round 1	Wrenc	h,						30
66	Straight	66							25
66	Bolts fo	r Flas	k, (per	set of 3,)				·	18
66				· · · · · · · · · · · · · · · ·					5
Keros	_	_	_	his Vulcanize				2	75
When	packed f	or Sh	ipping,	box,					25
حقى كا معقى كا	The Go	vernu	ent Tax	k on these Ma	chines is f	ive per	ceut.,	whi	ch i
added	to the a	bove p	rices.						

All orders promptly attended to.

B. T. WHIINEY.

For sale at all Dental Depots.

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MANUFACTURERS OF

## PORCELAIN TEETH,

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We invite the attention of Dentists and Dealers to our assortment of ARTIFICIAL TEETH, believing them equal to any offered to the profession.

We are prepared to furnish every variety of PLAIN and GUM TRETH for GOLD and SILVER PLATE, and RUBBER OR VULCANITE WORK, including Block and Single Teeth, for Vulcanite, with

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## DOUBLE-HEADED PINS.

These Pins have really two distinct and well-formed heads, one in the tooth, preventing the possibility of their being drawn out, and one for insertion in the Rubber. The upper central blocks have each five pins, and the lower central and side blocks each four; together, Fifty Double-headed Pins in each full set, our machinery enabling us to finish them in this improved manner, in which way they are not made by any other manufacturer.

From the many testimonials received in regard to their STRENGTH, we are led to believe they are

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WE ARE ALSO PREPARED TO FURNISH

Lathes, Vulcanisers, Chairs, &c. &c.

Also, a neat and complete apparatus for manufacturing

## edd Lelko beoatla

W. A DUFF, Da. J. J. GRIFFITH, D. D. S. W. A. DUFF & CO.,

516 Arch Street, Phile.

THE

## DENTAL TIMES,

**'** A

QUARTERLY JOURNAL

OF

### DENTAL SCIENCE.

EDITED AND PUBLISHED BY

DRS. T. L. BUCKINGHAM,

G. T. BARKER,

E. WILDMAN,

W. S. FORBES,

AND JAMES TRUMAN.

### FACULTY

OF THE

Pennsylvania College of Jental Surgery.

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PRICE \$1.00 A YEAR, IN ADVANCE.

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### TO THE PROFESSION.

In issuing the "Dental Times," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

Persons desiring to become subscribers, can do so by remitting the price of subscription, one dollar per annum, with name and address, to Dr. T. L. Buckingham, 243 North Ninth street, Philadelphia.

As we desire to keep a corrected list of the dentists in the United States, our friends and subscribers will please notify us when changing their location.

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FOR EXCELLENCE IN THE MANUFACTURE OF ARTIFICIAL TEETH.

The attention of Dentists is called to our late patterns of

### BLOCK TEETH FOR RUBBER BASE.

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We are endorsed by all who have given them a trial, as well as by the fact that we have just received a PRIZE MEDAL at the World's Fair in Prussia, for excellence in the manufacture of Artificial Teeth

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Blocks or Sections for Rubber Base,	20	cents.
Single Gum Teeth, " " Plate Work,	20	46
" Plate Work,	20	**
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" for Rubber Work	10	**
Pivot Teeth,	8	64

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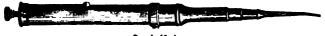
Our Teeth for Rubber Work have DOUBLE-HEADED PINS. These are distinct and well formed. One of them is really inserted in the tooth, the other is at the extremity of the pin, OUTSIDE. We thus secure a firm resistance in the body of the tooth, and ample space for the retention of the rubber around the pin outside. Our customers pronounce them "Excelsior."

A Liberal Discount made to Wholesale Dealers.

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## IMPROVED AUTOMATIC PLUGGER.



One-half size.

### SNOW & LEWIS,

### No. 278 MAIN STREET, BUFFALO, N. Y.

The attention of the Dental Profession is called to this Instrument with confidence that it will be found the most efficient substitute for the mallet and assistant yet devised.

The instrument has been in use for some time, having been submitted to practical tests by some of the best operators in the country, and in every instance it has met with approbation.

The working parts are simple, and not liable to get out of order. They are contained in a handle of German silver, (silver-plated,) not larger than an ordinary ivory handle. The above cut represents the Plugger, one-half size. The Instrument is operated by pressing the point upon the gold in the cavity in the manner of an ordinary hand plugger; the socket holding the point recedes into the handle a short distance, and a blow is given, which can be varied to any one of four degress of intensity at the will of the operator. It can be held in any position in the hand, and after a little practice, can be used in more places than a mallet.

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Automatic Plugger,\$10 00
Extra Points, per dozen,
Points in the rough, fitted to the socket, per dozen, 1 50
Points of any desired pattern furnished to order. All styles of Atkin-
son's and Abbot's points constantly on hand. The plugger will be sent

son's and Abbot's points constantly on hand. The plugger will be sent by express or mail on receipt of price, otherwise by express, C. O. D., with charges.

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RON CLAD BOILER.

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Gas Burner	\$15	00
Iron Clad Oven for two flasks, with Kerosene, Alcohol, or	•	
Gas Burner,	16	00
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Gas Burner.	17	00
Valcanising Boilor, of copper, for two cases, including two		
flasks, &c	15	75
Vulcanising Boiler, of copper, for three cases, including three		
fasks.	16	80
Kerosene Heater alone, including Stand for Vulcanizer,		50
Thermometer for Vulcanising Oven or Boiler,		00
Thermometer Tube and Scale, for Vulcanising Oven or	_	•••
Boiler,	1	00
Automatic Burner,		50
Aleohol Holder.	-	25
Flask for Vulcanising Oven or Boiler, each,		50
Clamp for Flack.		50
Wrench for Vulcanising Oven or Boiler,		25
		25
Packing Duster and contents,		
Batra Packing, each,		10
Extra Gas Fixtures,		50
Orders to insure prompt attention should contain cash		
change will be returned with the goods. When not so accom-	pani	ed.
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Wood's Plastic Metallic Filling. (Patented March 20, 1860, and September 4, 1864.) Price \$8 an ounce, Troy weight. Put up in 1 oz., \(\frac{1}{2}\) oz. and \(\frac{1}{2}\) oz., ingots, each stamped with the name of the Patentee and the date of both patents.

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Yours, &c.

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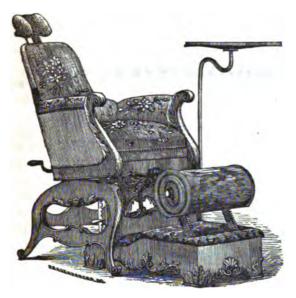
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June 25h, 1863.

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## All Articles in the Dental Line,

Of his own, and other manufacturers, of the most

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### At the Most Favorable Prices.

· All orders from abroad will be punctually and thoroughly attended to

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### DENTAL DEPOT AND MANUFACTORY,

For the Sale of the Latest Improved Teeth,

FOR ALL KINDS OF RUBBER AND PLATE WORK,

WITH DOUBLE HEADED PINS.

Together with a large assortment of all kinds of Dental Instruments, and other articles needed by the profession.

All orders promptly filled. Also on hand, lots of Flaming Testimonials, as regards the quality of my Porcelain Teeth, from some of the best Dentists in the profession.

### NEALL, McCURDY & NEALL,

SUCCESSORS TO

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<b>Packages</b>	containing	1	OZ.,	-		-	\$3.00
Do.	do.	6	dwts.,	_	-	-	1.00

Sent, post paid, on receipt of money. For Circular enclose return postage. Address

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POUGHKEEPSIE, N. Y.

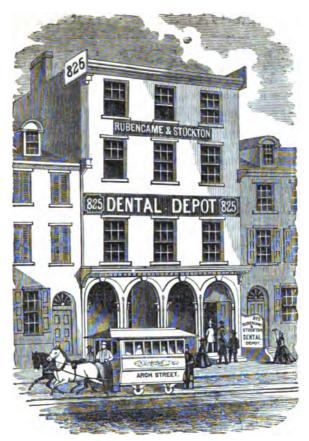
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which ill-health compelled him to suspend some years since.

He pledges himself that nothing shall be wanting on his part to make these renewed relations as pleasant and as satisfactory as those heretofore maintained.

Respectfully,

JOHN R. McCURDY.

## PORCELAIN TEETH.

Our teeth continue to give the utmost satisfaction to all who use them. The many improvements we are introducing in styles and shades are gaining for us new friends every day, and from all parts of the country we are in receipt of the highest encomiums. Already it is conceded, by a large proportion of the dental profession, that our make of teeth stand foremost in every particular. Many are the statements which we receive, directly and indirectly, asserting, with emphasis, that they are equal to any, and even superior to most of those offered by other manufacturers.

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We are prepared to supply the Profession with a very superior quality of our own make of Gold Foil. This Foil is made of double-refined gold, and is soft and adhesive. It is put up carefully in books, each of which contains the full weight marked upon it. Below we give a few certificates, attesting its good working qualities, and its thorough fitness for even the nicest operations.

RUBENCAME & STOCKTON.

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PHILA., June 20, 1865.

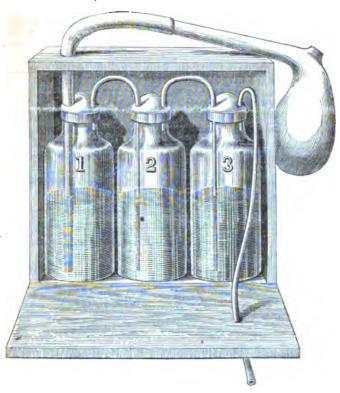
MESSES. RUBENCAME & STOCKTON-I have used your Gold Foil since it was first put in the market, and can recommend it as equal, if not superior, to any I have ever used.

T. L. BUCKINGHAM, 243 N. Ninth Street.

MESSES. RUBENCAME & STOCKTON—Gents.—I have used your Gold Foil for months past, and being pleased with its good working qualities, I can have no hesitation in expressing my approbation of it in this way.

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The above cut represents Dr. Moseley's Nitreus Oxide Gas Generator, with Retort in position on top, and one side let down so as to show the inside fixtures.

This is the most Compact, Efficient and Economical Apparatus ever offered to the dental profession. The Gas is thoroughly washed by being forced through the chemical baths, and is ready for immediate use. Twenty minutes will suffice to make enough for one operation.

The size of the Generator is sixteen inches long, four inches wide, and fourteen inches

deep, and the weight about ten pounds.

THE PRICE HAS BEEN SO REDUCED, that we can now furnish the Apparatus complete, (including the Generator, Retort, Inhaling Bag, (7 gall.,) Rubber Mouth-piece, and two sets of Chemicals,) for twenty-five dollars. Boxing, extra, one dollar and fifty cents.

#### LIST OF PRICES.

las Generator. Retort,	and two sets	Chemicals,.	 	• • • • • • •	\$15 00
Inhaling Bag, 5 gallons	J,		 		6 75
ັ ั . 8			 		7 25
7			 		7 75
Gasometer, 40 "			 • • • • • • • • • • • • •		18 00
Retorts, quarts,			 		1 00
Rubber Mouth-piece			 		2 50
Ammonia, Fused, best,					
" Crystalized,	best, per po	und,	 •••••	• • • • • • • •	75

### RUBENCAME & STOCKTON.

825 ARCH STREET, PHILA.

#### TAKE NOTICE.

A short man, with red hair, red whiskers, and soar on one cheek, is traveling through the country, and offering teeth for sale, which he represents as of our make. He claims also to be an agent for a new vulcanite base, and talks glibly. We pronounce him an impostor, and caution all parties against having any dealings with him.

RUBENCAME & STOCKTON, 825 Arch street. Phila.

#### INSTRUCTIONS

IN THE

### PREPARATION, ADMINISTRATION and PROPERTIES

## OF NITROUS OXIDE, PROTOXIDE OF NITROGEN OR LAUGHING GAS,

FOR DENTAL AND SURGICAL PURPOSES,

BY GEO. T. BARKER, D. D. S.,

Professor of Principles of Dental Surgery and Therapeutics in the Pennsylvania College of Dental Surgery.

RUBENCAME & STOCKTON,

PHILADELPHIA, 1866.

Will be ready in April.

Price, one dollar.

## THE ANCHOR PLASE.



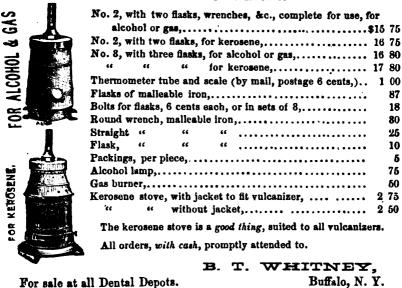
### THE LATEST! THE STRONGEST! THE BEST!

Price.	Brass. each,	\$2 00
••	Iron, Galvanized, each,	1 50
4.6	" each,	1 25
44	Bolt and Nut,	19
	Wrench,	10

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We are prepared to furnish every variety of Plain and Gum Treth for Gold and Silver Plate, and Rubber on Vulcanite Work, including Block and Single Teeth, for Vulcanite, with

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NO. 3.

THE

# DENTAL TIMES,

Δ

QUARTERLY JOURNAL

OF

## DENTAL SCIENCE.

EDITED AND PUBLISHED BY

DRS. T. L. BUCKINGHAM,

E. WILDMAN,

G. T. BARKER,

W. S. FORBES,

AND

JAMES TRUMAN.

### FACULTY

OF THE

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#### TO THE PROFESSION.

In issuing the "Dental Times," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

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The above out represents the Plugger one half size. The instrument is operated by pressing the point upon the gold in the cavity, in the manner of an ordinary hand plugger; the socket holding the point recedes into the handle a short distance, and a blow is given which can be varied to any one of four degrees of of intensity, at the will of the operator.

It is of good workmanship and accurately fitted throughout. The manufacture of the Snow & Lewis Plugger receives the personal supervision of the inventors, and none are effered for sale until fully tested by them. Although not entirely noiseless, the objection has been obviated as far as possible, by a "rubber-faced" hammer.

The time in filling is materially shortened, as the operator is always able to get the blow just when it is required. It can be held in any position in the hand, and after a little practice can be used in more places than the mallet.

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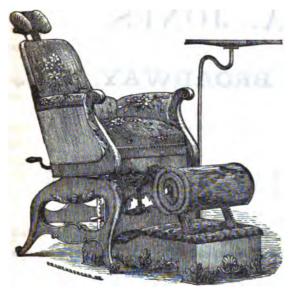
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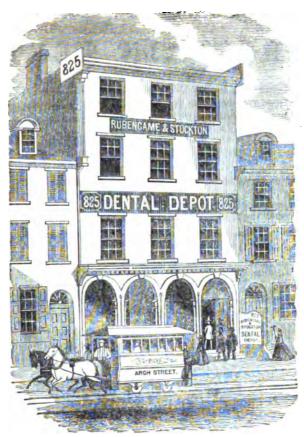
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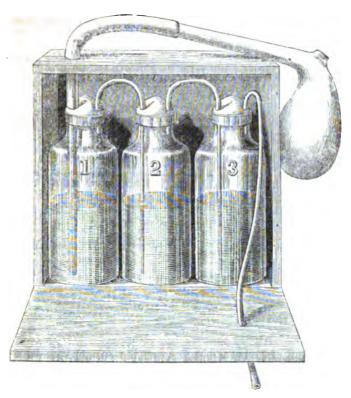
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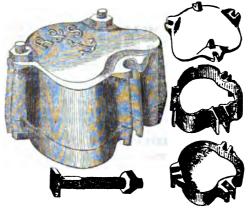
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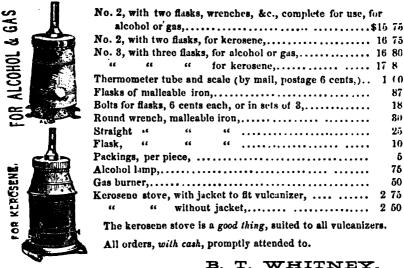
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VOL. IV.

APRIL, 1867.

NO. 4.'

THE

# DENTAL TIMES,

A

QUARTERLY JOURNAL

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## DENTAL SCIENCE.

ROITED AND PUBLISHED BY

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#### TO THE PROFESSION.

In issuing the "DENTAL TIMES," we desire to make it of interest to the mass of practitioners. To this end we earnestly solicit from our professional friends, communications on any branch of our specialty. To those who hesitate because their limited time incapacitates them for writing long or elaborate articles, we would say, give us the facts and the method, and we will lay them before our readers so that all will understand and many be instructed.

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# SURGICAL & DENTAL INSTRUMENTS, FILES, &C.

The subscriber would again remind the profession that he still continues to manufacture all kinds of Instruments, Dental Files, &c.

From the flattering testimonials he has received, (of which a few are appended,) of the superior quality of his Instruments and Files, he feels confidence in his ability to produce an article fully equal to any made.

Assiduous attention to the details of the business, (with an experience of thirty years,) has enabled him to make many improvements in the adaptation to the specific purpose; and, as the success of an operation depends, in some degree, on the adaptation of the instruments to the particular character of the operation, it needs no argument to convince those wishing to procure instruments, of the importance of purchasing the manufacture of those of long and well established reputation. Any orders tendered him will be promptly attended to. Illustrated catalogues will be furnished on application.

HORATIO G. KERN,

No. 25 North Sixth Street, Philadelphia.

#### TESTIMONIALS.

501 North Seventh Street, Philadelphia, June 8th, 1863.

H. G. KERN—Dear Sir—The excavators which you handed me some days since I have had in constant use, and take great pleasure in stating that I believe them to be a superior article, both in their ability to retain a sharp cutting edge, and withstand the force essential to the operation.

Yours, &c.

C. N. PEIRCE, D. D. S.

MR. H. G. KERN—Dear Sir—The excavators recently manufactured by you have been used with the utmost satisfaction. I can give them an unqualified recommendation. Yours, respectfully,

June 26th, 1863.

GEO. T. BARKER, D. D. S.

Mr. H. G. Kern—Dear Str—The last excavators obtained from you are of a very superior quality. I can recommend them as being equal to any I have ever used.

T. L. BUCKINGHAM, D. D. S.

June 25h, 1863.

### R. W. ARCHER'S

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Patented September 4, 1860.



universal use. It is the most convenient, the most durable, and the cheapest Chair in use. For complete description and list of prices, send for catalogue to R. W. ARCHER, Rochester, N. Y.

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For the very liberal patronage they have extended to him for the last twenty-five years, begs leave to say, that he still continues his business as usual at the above number, where may be found.

# All Articles in the Dental Line,

Of his own, and other manufacturers, of the most

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# DENTAL DEPOT AND MANUFACTORY,

For the Sale of the Latest Improved Teeth,

FOR ALL KINDS OF RUBBER AND PLATE WORK.

WITH DOUBLE HEADED PINS.

Together with a large assortment of all kinds of Dental Instruments, and other articles needed by the profession.

All orders promptly filled. Also on hand, lots of Flaming Testimonials, as regards the quality of my Porcelain Teeth, from some of the best Dentists in the profession.

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This invaluable preparation is now used by, and meets the approbation of intelligent and experienced Dentists in every State in the Union as being the only Self-hardening filling known that will retain its integrity and metallic color, without turning black and discoloring the teeth, and as being in all respects unequalled as a substitute for Gold, in cases where the latter is inadmissible, on account either of the great extent of the decay, the extreme tenderness of the tooth, the difficulty of access to the cavity, or from motives of economy.

Packages	containing	1	0Z.,	-	-	-	<b>\$3.00</b>
Do.	do.	6	dwts.	-	_	_	1.00

Sent, post paid, on receipt of money. For Circular enclose return postage. Address

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A substitute for AMALGAM in filling badly decayed teeth; and used for resetting PIVOT TEETH in badly decayed roots; also for filling over SENSITIVE DENTINE to destroy sensibility, and as a non-conductor of heat, and for many other DENTAL PURPOSES.

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I would respectfully inform the DERTAL PROFESSION that my Laboratory has been REMOVED TO 100 NORTH TENTH STREET, where, after having made considerable improvements in my style of carving and enamels, with assistants also, I am new enabled to execute all orders with promptness and despatch.

Dentists wishing to try Vulcanite Base, can have a few cases made at a reduced price.

WM R HALL

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# WHITNEY'S IMPROVED VULCANIZER.

LIST OF PRICES.

2	1	No. 2, with two flasks, wrenches, &c., complete for use, for	
GAS	R	alcohol or gas,\$15 75	
2		No. 2, with two flasks, for kerosene, 16 75	
	100 miles (100 miles (	No. 8, with three flasks, for alcohol or gas, 16 80	
AI COHOL		" " for kerosene, 17 8	
Ç		Thermometer tube and scale (by mail, postage 6 cents,) 1 00	
$\equiv$		Flasks of malleable iron,	
	- instant	Bolts for flasks, 6 cents each, or in sets of 8,	
2		Round wrench, malleable iron, 80	,
٠	- ``	Straight " " 25	,
	Ä	Flask, " " 10	,
	-A-	Packings, per piece,	,
ä	THEFT	Alcohol lamp,	,
Z		Gas burner, 50	,
8	111111111111111111111111111111111111111	Kerosene stove, with jacket to fit vulcanizer, 2 75	,
KEROSEN		« « without jacket, 2 50	,
FORK		The kerosene stove is a good thing, suited to all vulcanizers.	
•		All orders, with cash, promptly attended to.	
	7	B. T. WHITNEY,	
	For sale at a	all Dental Depots. Buffalo, N. Y.	

### JOHN W. MASSEY,

MANUFACTURER OF



AND DEALER IN

# DENTISTS' MATERIALS, No. 114 North Ninth Street, Philadelphia,

Having tested the teeth manufactured by J. W. Massey, we respectfully recommend them to the Dental Profession as equal, if not super or, to any now made.

WM. P. HENRY, D. D. S.,

Demonstrator of Mechanical Dentistry, Philadelphia Dental College.
GEORGE BROCKWAY, New York.
GEORGE CHEVELIER, M. D., Boston.

### SPECIAL NOTICE

TO THE

## DENTAL PROFESSION.

Having disposed of our entire stock of Dentists' Materials, Moulds, Machinery, &c., to the "Philadelphia Dental Manufacturing Company," we respectfully request a transfer of your custom to that establishment.

Being largely interested in the new organization, we will be present to attend to your orders as usual. While having greatly increased facilities, we feel tetter than ever prepared to meet your wishes, which we will, at all times, endeaver to do to your satisfaction.

With thanks for past favors, we are,

Yours, respectfully,

J. R. RUBENCAME,

T. H. STOCKTON, JR.

Late Rubencame & Stockton.

W. A. DUFF,

J. J. GRIFFITH,

Late W. A. Duff & Co.

PHILADELPHIA, January, 1867.

Having purchased the entire Stock of Dental Goods and Manufacturing facilities of the well known Firms of RUBENCAME & STOCKTON and W. A. DUFF & Co., of this city, we invite the attention of the Profession to our large and varied assortment of Artificial Teeth and Dentists' Materials.

By uniting the large collections of Moulds formerly in the possession of these respective firms, we are enabled to furnish Teeth of Styles, Sizes, Patterns, &c., in variety unequaled by any other establishment.

The best skill and experience of the two firms will be combined to furnish the most beautiful, natural and durable article of Artificial Teeth, and such as, on trial by all known tests, will prove to be the Strongest Teeth made.

We are also prepared to furnish Gold and Tin Foil, Gold and Silver Plate, Chairs, Lathes, and the most approved apparatus for making and administering Nitrous Oxide Gas, together with every article required in the Office or Laboratory.

Address:

### PHILADELPHIA DENTAL MANUF'G CO.

DEPOT, 825 ARCH STREET, Philadelphia, Pa.

W. A. Duff, President. J. R. Bubencame, Treasurer. T. H. Stockton Jr., See'y.
Dr. J. J. GRIFFITH, Superintendent.

### NITROUS OXIDE.



The annexed cut represents Dr. G. T. BARKER'S GASOMETER for NITROUS OXIDE, in which it may be kept on hand any length of time.

Capacity, 40 gallons. Price, \$50.

This being simply a Gasometer, can be used in connection with any Generator.

The illustration below represents our

New and Greatly Improved Apparatus

FOR THE MANUFACTURE OF

### NITROUS OXIDE.

It possesses many advantages over any now in use or offered to the profession, being complete and perfect in all its parts, simple in its arrangement, and cannot get out of order.

The jars are fitted up WITHOUT PLASTER OR CEMENT. and the joints so perfect as to prevent the possibility of leakage, to which those constructed differently are so liable.

By means of this Apparatus, the Gas can be made in the skortest possible time, without difficulty, and perfectly free from all deleterious ingredients.

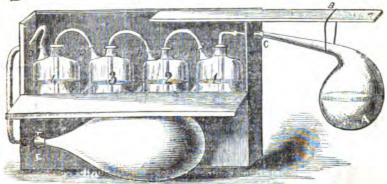
Price, complete as represented, with Four Jars, Retort, Seven-Gallon Inhaling Bag and Rubber Mouth-piece, \$20.00. Mouth-piece, with Valves and Trumpet End, as represented on next page, \$2.75 extra.

Boxing, \$1 00

This Apparatus can be used with or without the large Gasometer, and when used with it, the Inhaling Bag can be dispensed with by using the Valved Mouth-piece in which case the patient takes the Gas direct from the Gasometer.

Full instructions for making the Gas accompanies each Apparatus.

Many of these are now in successful operation and giving entire satisfaction.



PHILADELPHIA DENTAL MANUFACTURING COMPANY,
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# improved double-valve mouth-piece,

### WITH DR. BARKER'S FLEXIBLE RUBBER HOOD.



This is considered the best arrangement for the purpose, and its use has been ADOPTED BY THE MOST EXPERIENCED OPERATORS.

The Hood covers both mouth and nose, while one valve opens at every inspiration and the other at every exhalation.

Price, with Metallic Trumpet End, #4.75.
"Flexible Rubber Hood, 6.00.

Having a supply of these, we are now prepared to fill orders for them promptly.

#### LIST OF PRICES.

Gas Generator, including Four Jars, Retort and Chemicals,		<b>\$15.00</b>
Dr. Barker's Gasometer,	•	<b>50.0</b> 0
Inhaling Bag, 5 gallons,		<b>6.25</b>
"""6""		7.25
" " 7 "		7.75
Retorts, Tubulated,	1.00	@ 1.50
" Plain.		75
Ammonia, Fused, per lb.		80
" " per 5 lbs	-	3.75
Mouth-piece, Plain,	. •	2.00
" with Valves	•	4.00
" and Trumpet End,	•	4.75
" and Flexible Hood,	•	6.00
	•	75
Trumpet end,	•	
Flexible Hood,	•	2.00
Chemicals, per set,	•	<b>5</b> 0
Glass Jars, complete, for Generator, each,	•	3.00

## Porser Febru.

The following discounts are allowed on bills of Teeth:
Amounting to \$25.00 cash, 10 per cent.

Retail Price for Gum Teeth, 20 cents. Plain Teeth, 10 cents.

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OF

# HITROUS OXIDE,

## PROTOXIDE OF NITROGEN OR LAUGHING GAS,

FOR DENTAL AND SURGICAL PURPOSES,

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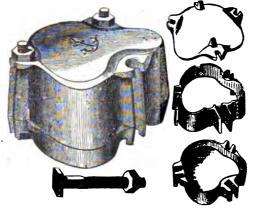
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### Philadelphia Dental Manufacturing Company,

PHILADELPHIA, 1867.

Price, one dollar.

# THE ANCHOR FLASK.



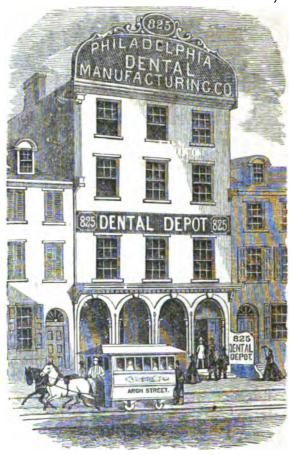
#### THE LATEST! THE STRONGEST! THE BEST!

We particularly recommend this Flask to your notice, as it has no superior, and is giving entire satisfaction in all respects.

Price.	Brass	\$2	04
44	Iron, Tinned,	ĭī	50
64	"		
"	Bolt and Nut,		
	Wrench,		

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No. 825 ARCH STREET, PHILADELPHIA, PA.



# Philadelphia Dental Manufacturing Co.

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